

1896.

NEW SOUTH WALES.

VOTES

AND

PROCEEDINGS

OF THE

LEGISLATIVE ASSEMBLY

DURING THE SESSION

OF

1896,

WITH THE VARIOUS DOCUMENTS CONNECTED THEREWITH.

IN FIVE VOLUMES.

VOL. V.

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NEW SOUTH WALES.

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SESSION 1896.  
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1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

DEPARTMENT OF MINES AND AGRICULTURE.  
(ANNUAL REPORT OF THE STOCK AND BRANDS BRANCH FOR THE YEAR 1895.)

Printed under No. 13 Report from Printing Committee, 18 August, 1896.

The Chief Inspector of Stock to The Under Secretary for Mines and Agriculture.

Sir, Department of Mines and Agriculture, Stock and Brands, Sydney, 31 July, 1896.  
On the 4th February last I submitted a Progress Report for the year ending 31st December, 1895, giving the approximate number of the horses, cattle, and sheep then in the Colony; and I have now the honor to submit for your consideration my complete Report for that year on the working of this Branch, which is, as usual, based very much upon Inspectors' estimates—owners still showing very little inclination to furnish data. It will be seen that the actual number of horses, cattle, and sheep in this Report exceed those in the Progress Report.  
I have, &c.,  
ALEX. BRUCE,  
Chief Inspector of Stock.

INSPECTION OF OFFICES.

During the year the Offices of the Inspector of Stock at Dubbo, Hume, Maitland, and Narrabri were visited, and the books, &c., inspected.

INSPECTORS' WORK.

The Colony is now divided into sixty-five Sheep Districts, and there are fifty-one Staff Inspectors employed, who have made the following inspections during the year 1895:—

Stock, including horses, cattle, and sheep	...	...	...	27,561	inspections.
Reserves	...	...	...	4,771	"
Public Pounds	...	...	...	487	"
Commons	...	...	...	658	"
Dogs	...	...	...	1,217	"
Pigs	...	...	...	2,050	"
Under Pastures and Stock Protection Act	...	...	...	4,580	"
Under Public Watering-places Act	...	...	...	1,932	"
„ Diseased Animals and Meat Act	...	...	...	714	"
Total	...	...	...	43,970	

being an average of 862 inspections by each Inspector.

The total number of stock inspected was,—145,432 horses, 792,545 cattle, and 25,302,937 sheep. This shows a decrease of 6,775 horses, 523,166 cattle, and 1,235,409 sheep inspected during 1895, as compared with the previous year.

Homebush Sale-yards.

As usual, the whole of the stock arriving at these yards were carefully inspected on each sale-day by an Inspector of Stock and the Government Veterinarian, and a considerable number were condemned as unfit for human consumption. The numbers of stock submitted to auction were as follows:—

Cattle, 125,805 head.  
Sheep, 2,953,156 head,—

a weekly average of 2,438 cattle and 56,791 sheep. Compared with 1894, this is an increase of 147 cattle and of 3,912 sheep per week. These inspections occasionally lead to the detection of stolen stock, as the Inspector's duty requires him to compare the brands and marks on the stock with those in the permits and travelling-statements accompanying them. These documents are filed in this office for reference. They are referred to by persons inquiring about stock supposed to have been stolen, and the identification of the owners of animals condemned at the Abattoirs.

Inspectors' Mileage.

During the past year the staff travelled over a distance of 192,624 miles while on duty, an average of 3,777 each per annum.

\* 326—A

Prosecutions.

[1,550 copies—Approximate Cost of Printing (labour and materials), £39 17s. 9d.]

*Prosecutions and Convictions obtained.*

Under what Act.	No. of Prosecutions.	No. of Convictions.
Diseases in Sheep Acts ... ..	81	71
Imported Stock Acts... ..	2	2
Registration of Brands Acts ... ..	2	1
Pastures and Stock Protection Acts ... ..	254	202
Public Watering-places Act... ..	34	30
Impounding Acts ... ..	4	4
Diseased Animals and Meat Act ... ..	14	13
<b>Total</b> ... ..	<b>391</b>	<b>323</b>

The cases under the Pastures and Stock Protection Acts were principally against owners who had failed to make returns of their stock at the proper time.

Altogether, the number of prosecutions was less than in 1894.

**HORSES.**

The number of horses in the Colony during the thirty-five years previous to and including 1895 was as follows:—

Year.	No.	Year.	No.	Year.	No.
1861 ... ..	251,497	1873 ... ..	328,408	1885 ... ..	344,697
1862 ... ..	233,220	1874 ... ..	334,462	1886 ... ..	361,663
1863 ... ..	273,389	1875 ... ..	357,697	1887 ... ..	390,609
1864 ... ..	262,554	1876 ... ..	366,703	1888 ... ..	411,368
1865 ... ..	284,567	1877 ... ..	328,150	1889 ... ..	430,777
1866 ... ..	282,587	1878 ... ..	336,468	1890 ... ..	444,163
1867 ... ..	278,437	1879 ... ..	360,038	1891 ... ..	459,755
1868 ... ..	280,201	1880 ... ..	395,984	1892 ... ..	481,416
1869 ... ..	280,818	1881 ... ..	398,577	1893 ... ..	481,399
1870 ... ..	280,304	1882 ... ..	328,026	1894 ... ..	500,068
1871 ... ..	337,597	1883 ... ..	326,964	1895 ... ..	482,459
1872 ... ..	304,100	1884 ... ..	337,172		

being a decrease of 17,609 horses on the number returned for the previous year, which is accounted for by drought, and low prices.

The number of horses as returned in each Sheep District of the Colony will be found in Appendix A hereto, as also the number of cattle, sheep, and pigs.

*Breed of Horses.*

Under this head the Inspectors' returns give the different breeds of horses as follows:—

	Ordinary.	Thoroughbred.	Total.
Draught ... ..	128,580	22,037	150,617
Light harness ... ..	109,793	17,848	127,641
Saddle ... ..	172,761	31,440	204,201

Grand Total ... .. 482,459

*Australian and Foreign Horses Introduced and Imported.*

*Australian Horses—From other Australian Colonies.*—By sea: 250 stud horses and mares, and 228 ordinary horses and mares; total, 478. Overland: 20 stud horses, 12 stud mares, and 3,701 ordinary horses and mares; total, 3,733.

*Foreign Horses—From Foreign Countries (including Great Britain and Ireland).*—During the year 11 horses were imported into the Colony from England and other countries, and were subjected to the prescribed quarantine of fourteen days in Sydney (except in the case of two lots which arrived without the necessary certificates, when an additional term of fourteen days was imposed, in accordance with Sub-Clause 3 of Regulation No. 33 under Imported Stock Acts) before being allowed to go inland. Particulars as to number and breed of these horses are as follows:—

Name of Importer.	Address.	Where Imported from.	Breeds.								Total.
			Thoroughbred.		Arabs.		Hackneys.		Clydesdales.		
			Horses.	Mares.	Horses.	Mares.	Horses.	Mares.	Horses.	Mares.	
Charles Baldwin ...	Durham Court, Manilla, N.S.W.	England	1	...	...	...	...	...	...	...	1
J. L. Brown .....	Caigan .....	"	...	...	...	...	...	...	1	...	1
Mark Foy .....	Oxford-street, Sydney .....	"	...	2	...	...	...	...	...	...	2
Hon. P. G. King ...	Goonoo Goonoo .....	"	...	...	...	1	...	...	...	...	1
Henry Rivett .....	Windsor .....	"	...	...	...	1	...	...	...	...	1
S. Nathan .....	Auckland, New Zealand .....	"	1	...	...	...	...	...	...	...	1
W. Tullock .....	Kiss's Bazaar, Sydney .....	India ...	...	...	2	...	...	...	...	...	2
J. McNamara .....	Castlereagh-street, Sydney ..	Noumea	1	...	...	...	...	...	...	...	1
W. S. Tait & Co. ...	Sydney .....	"	1	...	...	...	...	...	...	...	1
			4	2	2	...	2	...	1	...	11

*Horses fit for Sale, and number Exported, Improvement, &c.*

In the several districts of the Colony Inspectors' reports show that there are 25,270 draught, 25,810 light harness, and 41,222 saddle horses fit for market, while of this number 23,479 are considered suitable for requirements of India and China.

During the year 3,009 horses were exported, principally to Victoria, New Zealand, India, Queensland, and South and Western Australia. Reports from forty districts say that the horses are improving in quality.

In twenty districts there is no improvement in the quality of the horses, while in five districts they are reported as deteriorating.

*Tax on Stallions.*

A tax on stallions has been frequently asked for by owners, and in the interest of horse-breeding generally I think this is highly desirable. A circular was addressed to the several Boards of Directors throughout the Colony recently, and their replies, so far as received, are as follows:—

- Thirty are in favour of registration, and six against.
- Six are in favour of a veterinary examination, and nineteen against.
- Thirty favour a fee being charged for such examination, and two are against such a charge.
- The amount of the registration fee recommended varies from £1 to £20.
- Eighteen Boards recommend that the fees should be handed over to Agricultural Societies, and seven Boards are in favour of the Pastures and Stock Protection Boards receiving the amounts.

*Blindness in Horses on the Darling.*

This ailment has been a source of *very great inconvenience*, and in some cases caused heavy loss.

The reports from the Wentworth district show that 401 horses have been affected, 20 remained blind both by day and by night, and 53 are still blind by night. The disease still continues in the South-western and Western portions of the Colony, and although the Department has been investigating the matter almost continuously during the past two years with satisfactory results the owners themselves have not rendered that assistance which it was expected they would have done to combat the disease.

In May, 1893, Mr. Veterinary-Surgeon Robinson visited the Ivanhoe district, and after a stay of several weeks, during which he made personal inquiry with regard to the nature of the disease in the country on which it showed itself, and had several *post-mortem* examinations, he came to the conclusion that the ailment was parasitical, and prescribed accordingly.

His prescriptions, which are here given, consist of a vermifuge and tonic, were tried, but for some reason or other failed to effect a cure in the cases in which they were then administered, and it was taken for granted that the diagnosis of the ailment was not correct.

As, therefore, the Department was anxious to discover what the disease really was, and if possible to find a preventive, Mr. Veterinary-Surgeon Scott was sent in December, 1894, to the Wentworth district, in which it was most generally prevalent, to make further investigation and report, but I regret to say with no practical result, for after a prolonged inquiry, during which he visited a good many stations on which horses were affected, examined a considerable number of horses suffering from the ailment, made several *post-mortem* examinations, and after he had the eye, brain, and optic nerves of a diseased horse examined by Dr. Tidswell, Microscopist to the Board of Health, Mr. Scott came to the conclusion that the disease was a partial or total paralysis of the optic nerve, the result of feeding on swampy lake land and run flats, which have become infested by a specific organism of a malarial nature, which has been generated in the low lands subject to the inundation by the Darling River; but he made no recommendation as to treatment.

Both these reports have already been given to the public, and were published in my last Annual Report, together with the remarks of Mr. Chief Veterinary-Surgeon Stanley, on them, which are to the effect that although there was nothing in the reports on which he could form an opinion, he was disposed to think the disease was diathetic; probably some toxic agent which had been introduced or developed by the flood-waters, or some fungi or some deposit of mineral salts, or some growth of noxious herbage or the toxine of parasitic worms.

He advised keeping the horses off the contaminated country during the season of the year which favours the disease; and in the case of recently-affected animals, he recommends purgative medicine, followed by tonics and a complete change of pasture.

As, therefore, the real nature of the disease was still in doubt, and as it appeared from further information which had been received questionable whether the vermifuges prescribed by Mr. Robinson, M.R.C.V.S., had got a sufficiently long and careful trial, the Department forwarded to Mr. Inspector Morgan, of Wentworth, and Mr. Tully, of Wilcannia, supplies of the vermifuge prescribed by Mr. Robinson, and of the necessary materials for an arsenic drench, with instructions to procure a few affected horses and give them at stated hours the vermifuges, so many of Mr. Robinson's prescription and so many of the arsenic drench. Mr. Morgan was enabled to carry out the test in an effective manner, and the result is very satisfactory, his reports unmistakably showing that the treatment was effective, if ordinary care and attention is paid to the carrying out of the directions given for their treatment, and especially if the treatment is taken in time.

*Treatment.*

The following is the treatment, from which favourable results have been obtained:—

*Vermifuge.*

Arsenic.—5 grains, carefully mixed in say 3 lb. bran, and give three doses to each horse at intervals of one week between each dose—each horse to receive 5 grains in each dose; or

Turps and	{ 3 draughts for each horse at intervals of one week between }	1 pint linseed oil.
Linseed Oil { each draught.		

*Tonic.*

To follow the vermifuge if the disease has been allowed to make considerable progress:—

Black antimony	...	...	...	...	...	2 drams.	} 1 dose.
Tart emetic	...	...	...	...	...	1 "	
Sulphate of iron	...	...	...	...	...	3 "	
Common salt	...	...	...	...	...	½ oz.	
Powdered sulphur	...	...	...	...	...	½ "	

Dose

Dose to each horse at intervals of three days for three weeks, to be given in chaff or bran damped.

In the localities in which the horses are attacked, licks of salt and sulphur should be provided for them in troughs in the paddocks, and the horses could be attracted to the licks by a little bran and chaff

#### *Australian Stringhalt in Horses.*

Extract from Report by Mr. Chief Veterinary-Inspector Stanley, as published in Appendix B to Annual Report for year 1886:—

##### Susceptibility.

Horses of all ages and classes are equally liable to attack; brood mares perhaps suffer most; cobs and ponies seem the least susceptible, and young animals suffer less than the aged, whether horses are working, unbroken, or for breeding purposes, makes no difference, and strange horses contract the disease quicker than local ones. The recovery of horses brought into the stable or taken on board ship for a voyage is well known, and proves that feed and situation are important elements in connection with recovery. That it is not a poison, either mineral or vegetable, or sand in the stomach, is proved by history, symptoms, progress, and *post-mortem* examinations. Foals never show it whilst sucking their affected mothers.

That it is not rheumatism, or the result of over-driving, a sudden chill, exposure to rain or cold wind, must be apparent, because such influences have for ever existed everywhere, and this disease is of recent introduction, and its geographical extent can be clearly defined, at least in this Colony.

##### Treatment.

The curative treatment is to expel the parasites by the administration of anthelmintics, and dose after dose may be required for this purpose. It is necessary to remember that brood after brood have to be poisoned; and that when they are ensconced in a living being, whose tissues are also liable to suffer from the introduction of drastic drugs, it is impossible to effect our object without perseverance; and to prevent reinfection it is advisable to move the patients to a sound paddock, or better still, into a yard or stable, to feed liberally, and also constantly supply salt with their food.

##### Prevention.

Preventive measures, I consider, are very important: with this object avoid putting an affected animal into a paddock at all favourable for the development of worms. Infected paddocks should not be used by horses, even temporarily; half an hour's grazing may effect them, especially during the spring and autumn. The first grass after summer will scour animals, and has been known to cure them, because at that season the parasites are prepared for exit. Microscopical examination shows this, for many males are encysted and dead, and females pregnant with fully-developed eggs; some are viviparous; and it is to be noted that this is the time the paddocks get contaminated, and suitable soils may retain the ova for an indefinite period; so that one affected animal introduced, though he may be eventually cured, means later on (all circumstances being favourable) a hot-bed of infection for future tenants of the paddock.

An interesting case came under my notice of a recovery, almost as sudden as the attack; it occurred accidentally. The owner jumped on the affected horse, which had only been attacked a few days, to help to yard an obstreperous beast; and warned with the excitement, he worked hard and fast, and afterwards he was astonished to find his horse had recovered. The explanation is that the excitement increased the peristaltic action of the horse's bowels, and purged him, and so expelled the parasites; and subsequent stable-feeding established a cure. The obscurity of the subject and its importance has entailed my giving much detailed information, which has increased considerably the length of this report.

My thanks are due to those gentlemen who assisted me in the inquiry, by generously giving their horses for observation, and subsequent *post-mortem* examination, as this proved to be of great importance in making the investigation.

The disease appeared recently in the Goulburn and Braidwood districts, and copies of the reports of Veterinary Surgeon Robinson appear as Appendix B.

With the exception of the foregoing ailments, the horses have suffered but slightly from other diseases.

#### *Mortality among Horses and Sheep in Hay and Narandera Districts.*

As horses and sheep were recently reported as dying from an unknown cause in these districts, Mr. Veterinary-Surgeon Stewart was despatched to investigate the cause, and his report, with analysis by the consulting chemist to the Department, is given as Appendix C. The cause of the deaths is attributed to the horses and sheep eating the carcasses of poisoned rabbits, or in some instances perhaps picking up the phosphorised pollard bait laid for the rabbits. Of other diseases, *Anthrax* was reported in two districts, *Australian Stringhalt* in four districts, Strangles in twenty-two districts, Prurigo (horse mange) in four districts, Influenza in two districts, and Ophthalmia in four districts. (For treatment recommended for Influenza, see Appendix D.)

The estimated losses in horses during the year from various causes, principally drought, amount to 13,492.

#### CATTLE.

The returns of cattle in the Colony during the thirty-five years ending 31st December, 1895, stand as follows:—

Year.	No.	Year.	No.	Year.	No.
1861	2,271,923	1873	3,794,327	1885	1,317,315
1862	2,620,383	1874	2,856,699	1886	1,367,844
1863	2,032,522	1875	3,134,086	1887	1,575,487
1864	1,924,119	1876	3,131,013	1888	1,622,907
1865	1,961,905	1877	2,746,385	1889	1,741,592
1866	1,771,809	1878	2,771,583	1890	1,909,009
1867	1,728,427	1879	2,914,210	1891	2,046,347
1868	1,761,411	1880	2,580,040	1892	2,147,074
1869	1,795,904	1881	2,597,348	1893	2,155,500
1870	2,195,096	1882	1,859,985	1894	2,290,112
1871	2,014,888	1883	1,640,753	1895	2,023,768
1872	2,287,660	1884	1,425,130		

From the above it will be seen there was a decrease of 266,344 cattle during the year 1895, and an increase of 706,453, as against the decennial year 1885.

The number of cattle in each of the Sheep Districts of the Colony will be found in Appendix A.

91,242 cattle were introduced from other Colonies during the year, and 41,555 exported.

*Breeds*

*Breeds of Cattle.*

	Pure and Stud.	Ordinary.	Total.
Shorthorns ... ..	59,119	658,264	717,383
Hereford ... ..	26,559	205,772	232,331
Devon ... ..	12,021	59,692	71,713
Black-polled ... ..	1,538	4,407	5,945
Red-polled ... ..	10	.....	10
Ayrshire ... ..	5,560	22,123	27,683
Alderneys ... ..	2,109	3,829	5,938
Highland ... ..	.....	2	2
Holstein ... ..	48	251	299
Jersey ... ..	1,862	5,470	7,332
Buffalo ... ..	.....	7	7
Crosses (first crosses) ... ..	.....	955,125	955,125
<b>Grand Total ... ..</b>	<b>...</b>	<b>...</b>	<b>2,023,768</b>

The crosses are estimated as follows:—

Shorthorn and Hereford ... ..	322,995
Shorthorn and Devon ... ..	131,999
Hereford and Devon ... ..	58,504
Shorthorn and Black-polled ... ..	16,175
Ayrshire and Shorthorn ... ..	38,204
Alderney and Shorthorn ... ..	50
Unrecognisable ... ..	387,198
<b>Total ... ..</b>	<b>955,125</b>

*Australian and Foreign Cattle Introduced and Imported.*

**AUSTRALIAN CATTLE.**—Overland—285 stud bulls, 222 stud cows, 90,735 ordinary cattle; total, 91,242.

By Sea—27 stud bulls, 22 stud cows; total, 49.

**FOREIGN CATTLE.**—During the year five cattle were imported from England, and passed through the prescribed quarantine of sixty days in Sydney, before being removed inland. Particulars as to number and breed, &c., are as follows:—

Names and Addresses of Importers.	Where Imported From.	Breeds.				Total.	
		Polled Angus.		Jersey.		Males.	Females.
		Males.	Females.	Males.	Females.		
A. Chirside and Sons, Werribee, Victoria .....	England ...	.....	.....	1	.....	1	.....
B. Osborne, Jugiong, Gundagai, N.S.W. ....	" .....	1	3	.....	.....	1	3
		1	3	1	.....	2	3

*Increase and Decrease of Cattle in the several Districts.*

According to the number of cattle, as shown in Appendix A, there was an increase in ten districts owing to increased dairying, more owners, more introduced than sent away, breeding, and introduction from Queensland; while in the remaining fifty-five districts they have decreased, which is attributed to the following causes:—(1) The severe drought which prevailed nearly all over the Colony; (2) Less breeding and fewer store cattle introduced, consequent on the drought; (3) Sales; and (4) Owners stocking up with sheep.

*The "Cast" of Fat and Store Cattle.*

The estimated "cast" of fat cattle to be sent to market during the coming year is 282,238, and store cattle, 203,483. From fourteen districts the fat cattle are principally sent to Victoria; from two districts they are principally sent to South Australia and Tasmania; and the remaining districts supply the markets of Sydney, Maitland, Mudgee, Bathurst, Orange, Goulburn, Tamworth, Albury, Western Australia, and New Caledonia. The principal markets for store cattle are Muswellbrook, Maitland, Goulburn, and Wagga Wagga.

*How kept.*

The number of cattle kept wholly in paddocks is returned as 1,644,844; on open runs, 242,093; and the balance, 136,831, are depastured both ways.

*Improvement and Deterioration.*

In thirty-seven districts the cattle are said to be improving; in twenty-three districts they are stationary; and in five districts deteriorating. The principal reasons given for the improvement are—introduction of good stud stock; more attention and care in selection and breeding of stock, more particularly those for dairying purposes; also in culling and keeping in paddocks. The reason given for deterioration is inattention to breeding, many owners breeding from all sorts without respect to breed or quality, and using the same blood for years.

*Their Diseases and Ailments.*

**Pleuro-pneumonia.**—Inspectors' reports show that this disease existed in twenty-one districts, and that the cattle on ninety-three runs were affected; while the other districts are reported to be free from the disease.

This

This disease may now be said to be stamped out in Great Britain and Ireland. Not a single case was discovered among Home cattle during the past year. A number of cattle which had been exposed to the risk of infection was slaughtered by order of the Board of Agriculture.

*Cumberland Disease.*—From six districts the number of cattle reported to have died from this form of anthrax is 307.

*Symptomatic Anthrax or Blackleg* is reported to have carried off 434 head in one district.

*Cancer and Actinomycosis.*—1,148 cattle are reported to have died in thirty-five districts from these diseases.

*Tuberculosis.*—Cattle to the number of 3,567 are reported as having died from this disease in thirty-four districts.

*Red Water.*—From three districts 85 deaths are recorded. The disease is prevalent in certain localities in the coast country at particular seasons, more so in spring.

*Ophthalmia* occasionally assumes an epidemic form, and the number of cattle attacked is in some cases considerable, causing much temporary inconvenience to stock from blindness. Outbreaks have been reported from six districts, and the deaths numbered 50.

*Poisonous Plants.*—From nine districts deaths to the number of 290 are reported through eating supposed poisonous plants, but they were, it is believed, due in most cases to hoven.

*Foot and Mouth Disease.*—From latest accounts received Great Britain and Ireland have been free from this scourge for the past year, and probably will remain so, as importation is prohibited from all countries in which foot and mouth disease exists. It has never obtained a footing in this Colony.

#### *Diseased Animals and Meat Act.*

The number of cattle condemned under this Act was 3,314.

#### SHEEP.

The number of sheep in the Colony during the thirty-five years ending 31st December, 1895, stands as follows:—

Year.	No.	Year.	No.	Year.	No.
1861	6,119,169	1873	18,990,595	1885	37,820,306
1862	6,558,896	1874	22,797,416	1886	39,169,304
1863	7,169,126	1875	25,353,924	1887	46,965,152
1864	9,082,463	1876	25,269,755	1888	46,503,469
1865	9,650,106	1877	21,521,662	1889	50,106,763
1866	11,644,593	1878	25,479,484	1890	55,986,431
1867	15,066,377	1879	30,062,910	1891	61,831,416
1868	16,000,090	1880	35,398,121	1892	58,080,114
1869	16,848,217	1881	36,591,946	1893	56,980,688
1870	16,218,825	1882	36,114,814	1894	56,977,270
1871	16,766,012	1883	37,915,510	1895	47,617,687
1872	17,873,696	1884	31,660,321		

For number of sheep in the several Sheep Districts see Appendix A.

#### *Increase and Decrease.*

This shows a decrease for the whole Colony of 9,559,583.

The number of sheep imported during the year was 420,374, and the number exported 999,773, an increase in the exports over the imports of 579,399 sheep.

In Appendix D there is a statement kindly furnished by the Government Statistician which accounts for lambs, and shows why instead of an increase on the total number of sheep there is a large decrease.

#### *The different Breeds.*

	Merino.				Lambs.	Total.
	Rams.	Ewes.	Wethers.	Combing.		
Pure and stud—Superfine	59,694	863,130	358,975	376,834	1,658,633	
Ordinary	80,154	2,565,948	1,634,345	935,581	5,216,028	
					6,874,661	
Pure and stud—Medium	41,088	1,356,529	804,411	462,826	2,664,854	
Ordinary	125,115	6,158,148	4,377,895	1,633,605	12,294,763	
					14,959,617	
Pure and stud—Strong	46,293	1,227,710	668,743	429,449	2,372,195	
Ordinary	85,644	4,311,746	3,778,973	1,292,160	9,468,523	
					11,840,718	
					33,874,996	

Total, Combing .. .. . 33,874,996

Clothing.

	Clothing.				Total.
	Rams.	Ewes.	Wethers.	Lambs.	
Pure and stud—Superfino ...	12,099	201,433	166,280	52,175	431,987
Ordinary ... ..	14,312	346,908	399,221	83,484	843,925
					1,275,912
Pure and stud—Medium ...	14,248	368,298	275,455	101,180	759,181
Ordinary ... ..	52,853	2,542,507	1,662,434	570,105	4,827,899
					5,587,080
Pure and stud—Strong ...	11,314	417,531	363,974	133,718	926,537
Ordinary ... ..	24,925	1,203,606	887,855	365,440	2,481,826
					3,408,363
Total, Clothing ... ..					10,271,355
Total number of Merino Sheep ...					43,946,351

*Long-woolled Sheep.*

Pure and stud—Lincoln ...	22,933	99,875	83,274	54,038	260,120
Ordinary ... ..	22,853	162,875	165,230	76,402	427,360
Total, Lincoln ... ..					687,480
Pure and stud—Leicester ...	7,395	76,133	89,392	40,549	213,469
Ordinary ... ..	6,890	108,961	117,731	59,971	293,553
Total, Leicester .. ..					507,022
Pure and stud—Border Leicester 1		—	—	—	1
Total, Border Leicester ...					1
Pure and stud—Southdowns 781		4,446	977	1,997	8,201
Ordinary ... ..	418	3,097	3,498	1,028	8,041
Total, Southdowns ... ..					16,242
Pure and stud—Shropshire Downs 367		1,354	8	774	2,503
Ordinary ... ..	58	220	35	16	329
Total, Shropshire ... ..					2,832
Pure and stud—Hampshire Downs 5		15	—	10	30
Total, Hampshire Downs...					30
Pure and stud—Romney Marsh 1,581		2,457	150	827	5,015
Ordinary ... ..	375	862	900	405	2,542
Total, Romney Marsh ... ..					7,557
Pure and stud—Cotswold ... 35		14	—	13	62
Total, Cotswold ... ..					62
Pure and stud—Cheviot ... 1		—	—	—	1
Total, Cheviot ... ..					1
Pure and stud—Dorset Horn 1		—	—	—	1
Total, Dorset Horn ... ..					1
Total number, Long-woolled Sheep ... ..					1,221,228

*Cross-bred Sheep.*

Crosses of the above breeds (Long-woolled) with Merino principally. 23,113	943,803	850,806	632,386	2,450,108
Total, Crosses ... ..				2,450,108
Grand total ... ..				47,617,687

*Sexes and Classes.*

Rams ... ..	654,546
Ewes ... ..	22,967,606
Wethers ... ..	16,690,562
Lambs ... ..	7,304,973

Total ... .. 47,617,687

The increase of English and crossbred sheep for the year is 764,874.

*Australian*

*Australian and Foreign Sheep Introduced and Imported.*

*Australian Sheep Overland from other Colonies.*—Stud sheep, 3,276; ordinary, 405,783; total, 409,059.

*By Sea from other Colonies.*—12,646 stud sheep were introduced from the other Australian Colonies by sea; particulars of those sold at the annual stud sales are given in Appendix E.

The prohibition against the introduction of stock from Western Australia is now in force only so far as relates to sheep, and it is so on account of the existence of scab, although only in a few flocks in that Colony.

*Foreign Sheep.*

No foreign sheep were introduced during the year.

*The "Cast" of Fat and Store Sheep.*

The annual "cast" of fat sheep for the ensuing season is estimated at 5,118,425, and store sheep, 4,554,849.

<i>How Sheep are kept.</i>						
Paddocked ...	...	...	...	...	...	47,031,112
Shepherded ...	...	...	...	...	...	300,632
Both ways ...	...	...	...	...	...	285,943
						47,617,687

*Condition of the Flocks.*

In forty-four districts the sheep are said to be improving, the principal reasons given being more attention to breeding, paddocking, introduction of high-class rams and ewes, more careful classing and culling.

In fourteen districts they are said to be stationary, and in seven districts they are deteriorating.

*Lambing.*

From a return of the autumn, winter, and spring lambings obtained from the Inspector for each Sheep District, the average percentage of lambing for the whole Colony is estimated at 50½ per cent., *i.e.*, calculating the number of lambs marked on the number of ewes put to the rams. The autumn lambing was the highest, averaging 54½ per cent., while the winter and spring lambings averaged 30 and 40½ per cent. respectively. The estimated number of ewes put to the ram during the year was 16,015,634, and the number of lambs returned as marked during the autumn, winter, and spring lambings was 8,094,325, giving the average percentage of lambs for the whole Colony at 50½ as stated above. The total number of lambs returned on 31st December was 7,304,973, giving an actual percentage of 45½, or a decrease of about 4½ per cent. on the number returned for the different lambings, which is accounted for by continued losses from the drought after the marking was completed.

*The Clip.*

*Average per Sheep.*

*Lambs.*—The number of lambs shorn in the grease was 4,731,387; the number washed, 147,893; total lambs shorn, 4,879,280.

*Sheep.*—The number of sheep shorn in the grease was 38,925,708; creek-washed, 23,006; and scoured, 1,857,663; total sheep shorn, 40,806,377.

The average weights of the clip are estimated as follows:—

	<i>Lambs.</i>	<i>Sheep.</i>
	lb. oz.	lb. oz.
Grease ...	1 14½	5 11½
Creek-washed ...	1 5	3 1
Scoured ...	.....	3 5

*Total Clip.*

Total clip in the Colony for the year 1895, according to the number of sheep, would be:—	
38,925,708 sheep shorn in the grease; average clip, 5 lb. 11½ oz. per sheep =	222,606,391 lb.
23,006 " creek-washed " " " " " " " =	70,456 "
1,857,663 " scoured " " " " " " " " =	6,153,508 "
4,731,387 lambs shorn in the grease " " " " " " " " =	8,945,279 "
147,893 " washed " " " " " " " " =	194,109 "
	237,969,743 lb.

The estimated total weight of the clip as shown above is less than that of the previous year by 51,079,258 lb., owing principally to the large decrease in the number of sheep and lambs shorn. The average clip per fleece for sheep and lambs is also lower, owing to the severe season and low condition of the sheep.

*Condition of Clip.*

In fourteen districts the clip is reported as entirely sound and containing a good supply of yolk; twenty-eight districts fairly sound; and in remaining districts weak, owing to absence of yolk. On the whole the clip was very clean. The value of the wool, in a few districts, was affected by grass-seed and burrs.

*Exportation of Clip.*

The clip grown in the Colony of New South Wales is shipped principally to England, America, France, and Germany, and considerable portions of it is so from the ports of the three neighbouring Colonies, as well as from Sydney and Newcastle. The portions of our clip thus shipped from the other Colonies is often mistaken as the produce of those Colonies, more particularly for that of Victoria and South Australia.

The

The following is an estimate of the clip sent to Sydney, and also the proportion sent across the Borders and to Melbourne, Adelaide, and Brisbane for the years 1894 and 1895 :—

Port of Shipment.	1894.			1895.		
	Greasy.	Washed.	Total.	Greasy.	Washed.	Total.
	lb.	lb.	lb.	lb.	lb.	lb.
Sydney .....	215,535,980	6,292,052	221,828,032	182,052,232	2,541,427	184,593,659
Melbourne .....	51,636,602	1,488,132	53,124,734	40,860,575	624,215	41,484,790
Adelaide .....	10,227,016	3,594,250	13,821,266	8,451,158	3,252,328	11,703,486
Brisbane .....	274,969	.....	274,969	187,705	103	187,808
	277,674,567	11,374,434	289,049,001	231,551,670	6,418,073	237,969,743

This shows a decrease in the quantity of wool shipped during the year from the Ports of Sydney and Newcastle of 37,234,373 lb., as compared with that shipped in 1894.

#### Classing of Clip.

In thirty-five districts the clip is reported as having been well classed. In the other districts it is not considered to have been so, the reasons given being, owners consider it does not pay, that prices obtained are no better, also want of convenience, sheds not large enough to warrant expense, and the difficulty of obtaining competent wool-sorters.

#### Wool-presses.

A great number of different kinds of presses are used; those most in favour are Ferrier's Patent and Williams' and Robinson's; rack screw and pinion presses are used. There is still room for improvement in the mode of pressing, especially by the owners of small clips.

#### Woolpacks.

The woolpacks used are mostly Calcutta and Dundee, of various sizes, from 4 ft. 6 in. x 2 ft. 2 in. to 5 ft. 3 in., and the weight from 10 to 12 lb.

On forty-two holdings the wool is dumped before leaving.

#### Sheep-brands and Marks.

During the year 1895 the number of Sheep Brands and Ear-marks recorded, transferred, and cancelled were as follows :—

Recorded.		Transferred.		Cancelled.	
Fire Brands	... 192	Fire Brands	... 76	Fire Brands	... 58
Tar do	... 980	Tar do	... 146	Tar do	... 156
Ear-marks	... 699	Ear-marks	... 133	Ear-marks	... 120
Total	... 1,871	Total	... 355	Total	... 334

#### Ear-marking and Tattoo-marking.

In all districts the system of ear-marking sheep is now generally carried out, and the system of tattoo-marking is mostly used by owners of stud-sheep, not as yet to any great extent in the case of ordinary flock sheep, but where tried it has been found to be a good preventive of sheep-stealing.

#### Destruction of Wool by Tar and Paint Brands.

Buyers still complain of the destruction to wool by the use of the above materials for branding purposes, but they have been unable to suggest any remedy, although invited to do so, as there is a general consensus of opinion that any brand that will stand for twelve months destroys the wool to a certain extent.

#### DISEASES IN SHEEP.

*Scab.*—The flocks in this Colony and in the colonies of Queensland, Victoria, South Australia, New Zealand, and Tasmania are free from scab. It exists, but to a very slight extent, in Western Australia, but it is hoped that colony will soon be declared clean. The importation of sheep from Western Australia into this Colony is still prohibited.

*Anthrax.*—This disease appeared in several districts during the year, and owners are now availing themselves of the facilities offered for vaccinating their sheep, which has been the means of lessening the great mortality previously suffered by them. A statement (Appendix F) is attached showing the vaccinations made.

*Foot-rot.*—Thirty districts report foot-rot among the sheep, but only to a slight extent; the past season not being favourable to its spread. Remedies for foot-rot will be found as Appendix G.

*Fluke.*—Owing to the dry season this disease also was not so troublesome as in previous years, and is only reported from twenty-eight districts without any serious losses.

To prevent its spread owners are again urged to free their land from surface water by running plough furrows where practicable and helping them with the spade. The preventives used by owners were salt, tar, and turps, sulphate of iron and Liverpool salt, and salt and sulphur.

*Parasitic Worms.*—Thirty districts report the sheep as having been infested with worms last year to the extent of about 16 per cent.; in twelve districts the sheep were infested with stomach, lung, and tape worms; two districts with tape and lung-worms; five districts with stomach-worms; and one district lung-worm only.

The following results have been gathered regarding the efficacy of the various Drenches and Licks used for Sheep for Worms :—

#### Drenches.

*Arsenic.*—For the stomach and tape worms the arsenic and soda drench is still reported as the most effective, and has been by far the most generally used. It has, however, been recommended that potash, as being less severe on the lining of the stomach, should be substituted for soda in its preparation.

The arsenic and soda drench is reported by several of the Inspectors as having been also efficacious for lung-worms. No authenticated information has been received of this drench affecting the health of the sheep or injuring the wool.

*Turpentine.*—Turpentine, with various mediums, has been very generally given for stomach, tape, and lung worms, with good results, when repeated.

*Fumigation with Sulphur* is reported to have been tried in one case for lung-worms with the best results.

*Sulphate of Iron, Horehound, Sulphur, Salt and Iron* are reported to have been given, but not with satisfactory results.

*Hayward's Specific* has given very good results for lung-worms; but the reports as regards stomach and tape are conflicting.

*Pottie's, Weaver's, and Quibell's Drenches* are reported to have been used in several districts with fairly satisfactory results.

While it can be said that a decided improvement follows the administration of most of the drenches generally used, it is a fact that even in the case of the most effective the *post-mortem* examinations disclose that generally where the sheep are at all badly infested some worms are still alive; and this again, it is believed, arises from the owners delaying too long in drenching, and allowing the worms to have too great a hold on the sheep before they are drenched. The consequence is that some worms are left, which keep the sheep from thriving, and, with the introduction of fresh eggs from the water and pasture—if the weather is at all favourable for the development of the worms—in the course of a few months make the sheep as bad as they were before they were drenched. To make the cure effective, therefore, sheep which have been badly infested should, on receiving one drench, be kept as near the drenching yards as possible, and receive a second drench in the course of twelve or fourteen days after the first.

But, while licks and drenches should be provided and given at as early a date and as often as required, owners should give their earnest attention to the removal of what may be termed the contributing causes of the pest by avoiding overstocking, attending to the proper nourishment of the lambs and weaners, burning off old pasture, and getting rid by draining of surface and stagnant water, as suggested in Vol. II, part 2, of the *Agricultural Gazette*.

#### Licks.

It is reported that the following licks have been used with good results:—

Salt and sulphur.	Salt, sulphate of iron, and Hayward's specific.
Salt and sulphate of iron.	Salt, tar, and turpentine.
Salt and turpentine.	Pottie's Preventive Lick.
Salt, sulphate of iron, and turpentine.	Salt and lime.
Salt, sulphur, and sulphate of iron.	

It is scarcely necessary to point out that a lick, if it is efficacious in warding off an attack of worms, is far preferable to a drench; and as owners in all but the true saltbush country are now aware that it pays them well to give their sheep a liberal supply of salt, it would add very little to the trouble or expense to give once a month with the salt some of the other ingredients here mentioned which they found from experience was to any extent effective in protecting their sheep from the worm-pest.

#### Lung-worms in Lambs.

During the past year lung-worms in lambs, notwithstanding the dryness of the season, were troublesome in several districts, and many lambs were lost in consequence.

This occurred only on the overstocked pastures,—where light stocking was carried out the percentage was good and the lambs robust.

Dr. Cobb, Pathologist to the Department, is still continuing his investigations in regard to the life history of worms and other parasites in sheep, and the work is carried on at intervals between seed time and harvest time, at which periods he is engaged at the Experimental Farm at Wagga Wagga. It is also carried on simultaneously with other work connected with the Department of Agriculture, hence the reason for the delay in the preparation of his full report. Considering the time spent on this work during the past year, much progress has been made.

He also prepared, at my request, a report on fluke in sheep in advance of his full report. This report embodies the investigations which resulted in the first discovery of the Australian intermediary host of the sheep fluke, briefly announced in the newspapers in the various colonies some months ago, and reproduced throughout the world.

This advance report will appear in an early number of the *Agricultural Gazette* with illustrations.

The following statement shows the work done by Dr. Cobb:—

1. Copy ready for printing, amount equal to over 150 pages, as printed in the *Agricultural Gazette* of New South Wales.
2. Wood-engravings, already cut and ready for the printer, about 210 figures.
3. Drawings and sketches prepared, over 450.
4. Plates embodying about 100 figures.

He adds that the engravings are of a superior nature, the drawings being the result of the most careful and assiduous labour. It is his opinion that as an aid to the practical recognition of the various parasites, and their effects in causing disease, and of their own structure, these drawings have never been equalled.

It is his intention to devote the coming months of this winter to completing the full report, which will deal with:—

1. Parasites in general, popular discussion, containing many new ideas.
2. Life histories of various parasites of sheep and other stock.
3. Distribution of various species of parasites.
4. Preventive measures.
5. New species of parasites, &c.

Sheath

*Sheath Disease in Wethers on the Lower Macquarie.*

A disease affecting the sheaths of a number of wethers upon a run in the Coonamble district was professionally examined in October, 1894, by Mr. Veterinary-Surgeon Scott, instructed by this Department, whose report thereon I append in the form of Appendix H.

As the disease has since shown itself in other parts of the Colony, the treatment then recommended, and which proved to be successful, is republished for the information of owners. (See Appendix H.)

PIGS.

On 31st December, 1895, the number of pigs in the Colony stood at 221,597, being a decrease of 51,698 on the returns for the previous year.

Thirteen pigs were introduced by sea from the other Australian colonies.

The prohibition which has been in force against the introduction of pigs from New Zealand in consequence of an outbreak of swine fever in that colony has been renewed for a further period of twelve months, as it is considered advisable that a period of at least that time should elapse after the disease had disappeared before the prohibition is removed on account of the extremely infectious and deadly nature of the disease.

One hundred and fifty-four pigs were exported from Sydney during the year.

One ship's pig was placed in quarantine during the stay of the vessel to which it belonged in port, and ninety-one were killed on board, as the owners would not quarantine them.

According to latest reports swine fever is still very prevalent in the United Kingdom.

DOGS.

Eighteen dogs which arrived from England and other places outside the Australian colonies passed through quarantine during the year.

Sixty "ships' dogs" were quarantined during the stay of vessels in port, and fourteen "ships' dogs" were destroyed.

All "ships' dogs" and other stock on board foreign vessels for the use of the passengers and crew are now quarantined during the stay of the vessel to which they belong in port, whether in Sydney or at Newcastle.

Four hundred and thirteen colonial dogs were introduced at the Port of Sydney from the other colonies, and 302 dogs were inspected prior to exportation.

*Diseases in Dogs.*

Rabies is reported to be increasing at an alarming rate in Great Britain and Ireland. The number of cases reported for 1895 was nearly three times that for 1894. In Paris the disease is also on the increase.

TRAVELLING STOCK (*Reserves, Roads, Tanks, Wells, &c.*)

*Trespass on Reserves.*

In thirty-four districts the travelling stock and camping reserves are reported as having been trespassed upon, generally only to a slight extent, and in thirty-one districts they are reported as being free from trespass.

From seven districts it is reported that 120 horses, 450 cattle, and 1,034,708 sheep have travelled through during the year in search of grass and water. From five districts the number of loafing sheep is given at 143,420.

Constant complaints are being received of the want of grass on the Travelling Stock Reserves, more especially in the Central and Eastern Divisions of the Colony. There they are in most cases under lease, and are fenced off from the adjoining land or are enclosed in paddocks containing very little else but the reserved land, and the tenant as a rule either "skins" the reserves or sublets them to others who do so. The result is that legitimate travelling sheep suffer severely by the way for want of grass, and if they are prime fat when they start, and travelling on foot to market for even a moderate distance, by the time they reach their destination they are second, or it may be if the weather is at all unfavourable only third rate mutton.

If, again, they are stores, which they more frequently are, they would, although in first-class store condition when they started, be little else than "bags of bones" by the time they reached the run for which they were purchased, and besides losing a considerable percentage by the way, will take quite twice the time to fatten they would have done if they had had a fair share of feed by the way. The wool also suffers, and frequently in such cases shows a decided break in the fibre, caused by the starvation.

Although it would be impossible to arrive at the correct estimate of the loss owners now sustain through the want of grass for their stock on the travelling stock and camping reserves while travelling to market or to the mountains in times of drought, and the portion of that loss which can be fairly charged to the leasing of Travelling Stock and Camping Reserves, I think it is possible, by taking on the one hand the number of sheep and cattle reported as being on the road and allowing a moderate amount per sheep for depreciation through the want of grass on the reserves, and taking, on the other hand, the rent received from those who now lease these reserves from the Government, to show that the amount thus received is a mere trifle compared with the loss arising from the letting of reserves, to say nothing of the suffering of the stock from starvation.

By the returns from the Inspectors' of Stock of the sheep traffic (I will deal only with that in detail), last year amounted to 15,743,959 in the Central Division and to 3,672,785 in the Eastern. But as a good many of these sheep would be reported by more than one Inspector, a deduction will have to be made on these amounts, and in order to keep this estimate well within the mark, I will make a deduction of two-thirds in the case of the sheep reported in each of these divisions, which would in that way make the traffic 5,247,986 in the Central and 1,224,261 in the Eastern Division. Then,

Then, supposing that the depreciation through the want of grass on the reserves amounted to 4d. per sheep (it would frequently, in the case of fat sheep, be 1s.), and that the share of the 4d. set down for depreciation attributable to the letting of the reserves is 2d. per sheep, that would make the depreciation in the Central Division amount to £43,733, and in the Eastern Division to £12,202, or together to £55,935.

Then, again, taking the land comprised in these reserves in the Central Division at, say, 2,235,499 acres, and in the Eastern Division at, say, 843,536 acres, the annual rent derived from the reserves in the Central Division at, say,  $\frac{1}{4}$ d. per acre would be £6,985, and that from the Eastern Division £3,535, or together £10,520.

These calculations, supposing for the moment they are approximately correct, show that the Government collect £10,520 for the rent of reserves, but by doing so a loss of £55,935 is inflicted on our sheep-owners.

To this has to be added the loss on cattle and horses travelling in these Divisions which, counting one head of large stock equal to ten sheep, could not be estimated at less than £25,000.

It has too to be borne in mind that teamsters and travellers are also severe losers through the letting of these reserves.

The mere withdrawal of the reserves from lease, without providing the means for protecting them from trespass, might not, perhaps, bring about all the improvement that is desired, but if they were withdrawn and no rent required to be paid to the Lands Department a small charge, such as the owners would not feel, might be levied from travelling stock, which would not only enable the Department to employ a sufficient staff to protect the reserves, but would also provide the necessary outlay for clearing the reserves of burrs and other noxious weeds, a matter which is urgently required.

#### *Marking of Travelling Stock and Camping Reserves.*

Fair progress has been made with regard to the marking of Travelling Stock and Camping Reserves, the system of which is shown as Appendix L, there being at present about 900 miles surveyed and about 400 miles in course of survey. The routes marked are:—

1. From Boggabilla, *via* Yetman, Warialda, and Cobbadah, to Breeza.
2. From Moree, *via* Millie, Narrabri, Boggabri, Breeza, and the Liverpool Range, to the Bulga Mountains.
3. From Walgett, *via* Coonamble, Mendooran to Uarbry.
4. From Coolah, *via* Uarbry, to Rylstone.
5. That portion passing through Terry-hie-hie holding.
6. From Boggabri, *via* Turrabeile or Cox's Creek, to Coolah.
7. Mungundi to Moree.

And those in course of marking are:—

1. Along the Mara Creek from the Barwon River upwards.
2. Along the Bogan to Travelling Stock Reserve on the Murda Creek.
3. From Breealong to Dubbo.

With a view of making these surveys of practical benefit to drovers, stock-owners, and others, lithographs are being prepared showing sections of the roads in lengths of between 20 and 30 miles.

Lithographs of the roads, Boggabilla to Cobbadah, in six (6) sections; Moree to Cobbadah, *via* Gurley Holding, in one (1) section; Walgett to the Castlereagh, in one (1) section; and Liverpool Range to Putty, in five (5) sections, are now on sale at the Head Office, and also at the local Stock Office, at 2s. per section.

#### *New Stock Roads required.*

In eleven districts new roads are required for travelling stock, and to obtain these action has been already taken in seven districts.

#### *New Stock Reserves required.*

In seven districts new reserves and alterations of existing ones for travelling stock are required. In fifty-eight districts there are sufficient reserves; but in a great many cases the reserves are leased under annual lease, and are, therefore, kept very bare of feed.

#### *New Wells, Tanks, or Dams.*

In twenty districts the inspectors report that new wells, tanks, or dams should be constructed by the Government at places which they indicate.

### REGISTRATION OF HORSE AND CATTLE BRANDS.

#### *Brands registered.*

The number of horse and cattle brands registered up to 31st December, 1894, was 75,097. The number of brands registered during the year 1895 was—Horse brands (alone), 156; cattle brands (alone), 204; and horse and cattle brands, 1,143; making a total of 1,503.

This shows a decrease of 333 in the total number of brands registered during the year as compared with 1894. There is an increase in the number of brands transferred, and a decrease in the number of brands cancelled.

#### *Brands transferred.*

The brands recorded during the year 1895 as transferred were—Horse brands, 32; cattle brands, 46; horse and cattle brands, 62; total, 140, being an increase of 32 on previous year. *Brands*

## 13

*Brands cancelled.*

The brands cancelled (horse and cattle) in 1895 were 120.

*Addresses changed.*

The number of addresses of owners changed in 1895 was 70.

*Compliance with the Act.*

In all the districts the provisions relating to registration and the other requirements of the Act are reported as being fairly carried out.

*Benefits of the Act.*

The inspectors, in alluding to the benefits of the Act, report that it prevents duffing, stock-stealing, facilitates identification, assists in recovering lost stock, and otherwise is a great convenience and protection to stock-owners.

There is a great necessity for an amendment of the Registration of Brands Act, in order that the existing brands, where required, may be reregistered, as a very large percentage of brands now stand on the Register in the names of proprietors long since deceased, or who have left the Colony, or given up using them. As the law now stands there is no provision made for the cancellation of these brands, and they are, therefore, practically locked up, and these include some of the best brands, they having been taken up when the present Act was passed.

Another advantage to be derived by the proposed reregistration would be a compilation of the Brands Directory in revised form, which now comprises eleven volumes. The searching for a brand by poundkeepers and the public is, therefore, no easy task, and the publication of all the brands in one Directory is a matter of absolute necessity, and asked for by inspectors and poundkeepers generally. Besides this the original stock of the Directory for the period from the passing of the Act up to 1886 is almost exhausted, and to reprint it will entail a large expenditure, the usefulness of which will be to a large extent lost owing to its not being up to date.

## POUNDS.

*Number and Inspection.*

At the end of the year there were 235 pounds in operation in the Colony; 35 have been closed for want of poundkeepers, and there are sites set aside for the establishment of 158 more as occasion requires. The whole of the pounds are inspected periodically by the various stock inspectors.

*State of Yards.*

Thirty-two of the pound-yards are reported to be old; some require renewing, being unfit for the safe custody of stock; while others need repairs. The remainder are said to be in a fair and good condition.

*Keeping and Depasturing Pound Stock.*

The provision made for the proper sustenance of impounded stock, according to the reports received, is satisfactory. As a rule, poundkeepers have now paddocks for the stock.

*Management of Pounds.*

The poundkeepers are reported to be performing their duties, upon the whole, in a satisfactory manner, and the appointment of inspectors of stock as inspectors of pounds has had a very beneficial effect.

## NOXIOUS ANIMALS.

*The Districts in which the Pastures and Stock Protection Act is in force.*

The Act has been brought into operation in all the districts, and during the year work has been done to the extent shown in Appendices I and J.

*Receipts and Expenditure under the Act.*

The amount of assessment paid by stock-owners in 1895 was £39,638 14s. 0d.; and the amount expended £45,912 10s. 2d., the difference being accounted for by the subsidy granted by the Government to the Boards, and large amount to credit of some of the Boards at commencement of the year. Eight districts are reported to be in debt to the amount of £878 17s. 0d.

In seven districts full rates were levied, in fifty-two districts less than full rates, while in six districts no rates whatever were levied.

During the year the bonuses paid by the Boards for scalps ranged as follows:—For kangaroos, from 2d. to 6d.; kangaroo rats, 1d. to 4d.; wallaroo, 2d.; wallaby, from 1d. to 4d.; paddymelon, from 1d. to 4d.; bandicoot, 1d. and 3d.; hares, from 1d. to 6d.; native dogs, from 10s. to 40s.; pups, 2s. 6d. to 10s.; opossums, 1d. and 2d.; wild pigs, 3d., 6d., and 1s.; eagle-hawks, 2d. to 5s.; emus, 6d.; crows, 1d. to 6d.; foxes, 10s. and 20s.; and flying foxes, 1d. and 1½d.

*Increase and decrease.*

Kangaroos are reported to be increasing in ten districts, wallabies in fourteen districts, native dogs in eight districts, hares in twelve districts, and wild pigs in three districts. In twenty-five districts kangaroos are reported to be decreasing, wallabies in sixteen districts, native dogs in eighteen districts, hares in thirteen districts, and wild pigs in two districts.

*Number*

*Number destroyed.*

The number of kangaroos destroyed during the past year was 155,908; of kangaroo rats, 467,475; of wallabies, 1,393,253; of wallaroo, 8,633; of wombats, 477; of bandicoots, 5,757; of paddymelons, 42,980; of wild pigs, 43,965; of hares, 700,917; of foxes, 66; of native dogs, 11,383; of opossums, 8,528; of eagle-hawks, 5,052; of crows, 51,921; of emus, 6,619; and of flying foxes, 831.

*Steps taken for their destruction.*

In the majority of the districts hunting with dogs, drives, shooting, trapping, and poison have been adopted with satisfactory results. In forty districts poison has been used, mostly for dogs, with fair to best results, and from five districts it is reported that the results have not been satisfactory, the dogs being too cunning to take baits.

## AMENDMENTS SUGGESTED IN THE ACT BY THE BOARDS.

The agitation for the passing of the Stock and Pastures Bill still continues, and among other amendments in the law asked for it is suggested that uniform rates of assessment and bonuses should be fixed; that assessments should be paid at the time of making returns; that farmers and fruitgrowers should contribute to the funds raised under the Act; that all assessment be paid into a general fund; that the Government should contribute a higher rate of subsidy to the funds of the Boards; that Section 6 of the Pastures and Stock Protection Act Amendment Act of 1881 be amended; that Superintendents should have equal voting power with owners; that the suspension of the provisions of the Act in any district should be allowed on petition; that the Boards should have the administration of the Rabbit Act; and that a measure should be passed dealing with noxious weeds and plants.

## LOSSES FROM NATIVE AND TAME DOGS.

The losses through native dogs for the year are estimated at 115,589 sheep, valued at £25,591; and from tame dogs 54,613 sheep, valued at £11,966; making a total loss of £37,557. A stricter enforcement of the law with respect to stray dogs, and the registration of dogs, is urgently required.

## COMMONS.

There are now 307 Commons in the Colony, the average acreage of which is about 4,000 each.

*Number of Commoners, Stock, &c.*

The average number of Commoners to each Common is estimated at eighty-nine, and the average number of stock kept on each Common at 148.

Two Commons are reported to be used for other purposes than that for grazing Commoners' stock. Many of the Commons are unfenced, consequently are trespassed upon by travelling stock.

## THE LIVE STOCK EXPORT TRADE.

This trade which at first bid fair to assume some importance has it may be said turned out a failure principally from the following causes:—

- (1). The cattle after the first few shipments were ordinary bush cattle not broken to be tied up and unaccustomed to cultivated food.
- (2). Through effect of the drought very few prime cattle were to be had, and instead of prime well-bred young cattle a great deal of comparatively old, large boned second rate cattle were shipped.
- (3). Instead of being well rested, watered, and fed after long journeys by rail they were put on board in a starved and fevered state direct from the trucks.
- (4). In loading them the cattle were in many cases very roughly handled, and there is no doubt numbers of them seriously injured themselves before they were tied up in their places.
- (5). The space given them was in a good many cases insufficient for the proper accommodation, care, and cleanliness of the stock.
- (6). But the principal reason for want of success and discouragement as regards the trade in future is the low price which the beef and mutton of cattle and sheep slaughtered at the port of debarkation (which it must all now be) in England brings. The very best American is now sold at from 4d. to 5d. per lb.; and this has arisen from enormous increase in the importation of stock, principally cattle from the United States, Canada, and the Argentine, but mainly from the Argentine.

The greater portion of the defects here noticed could no doubt be remedied, but if a very considerable rise in the price of this class of beef and mutton does not take place in England there is little or no prospect of Australia with the long voyage, comparatively high freight, and heavy expense for forage and insurance ever being able to compete with Canada or the Argentine, or even the United States.

## EXPORT OF CHILLED MEAT TO LONDON.

Several attempts have been made to put chilled instead of frozen beef on the London market. One of these attempts, that by the "Doric," from New Zealand, with the aid of Dr. Shield's thermostat, was fairly successful, both as regards the condition of the meat and the price it realised; but it is now found that it was so only by lowering the temperature until the meat was partially frozen some eight or ten days before it reached England. In this way, when the beef was landed the greater part of each quarter of the meat was still chilled while it had, so to speak, a shell of frozen tissue round it, which prevented taint, but which was thawed by the mere exposure in the temperature of the day, thereby enabling the meat to be offered and sold as chilled.

It is believed that with the aid of the thermostat the same course could be again followed with like success, but what with the additional cost of freight ( $\frac{1}{2}$ d. per lb.) for chilled compared with frozen meat (the chilled meat must be hung and cannot be stacked, thereby occupying a great deal more space), the moist appearance of the meat, and the additional risk—the attempt has not been renewed with a thermostat. It was tried without in a shipment from Queensland, but it proved a failure. It is hoped, however, that further attempts will be made and that they will be still more successful, as our meat is placed at a great disadvantage in competition with American, through its being hard frozen instead of chilled.

THE following is a Statement of the Boiling-down, Chilling, Freezing, and Preserving Works in the Colony and of their Capacity, and the Work done during 1895.

Name of Establishment	Boiling.		Chilling.		Freezing.		Preserving.		Sundries.	Remarks							
	Capacity per diem.	Number treated.															
	Cattle or Sheep.	Cattle or Sheep.															
Albury Boiling-down Works, Albury ..	50	2,000	..	55,155	..	..	..	..	..	..							
Bungowanna do ..	..	..	..	8,000	..	..	..	..	..	..							
Hereford do Bathurst ..	25	250	..	17,191	..	..	..	..	..	..							
Alloway Bank do ..	25	250	30	3,119	..	..	..	..	..	..							
Bourke Meat Preserving Co., Bourke ..	..	2,000	..	65,090	40	800	188	81,390	..	..							
Bunyan Boiling-down Works, Cooma ..	..	2,000	130	48,000	..	..	..	..	..	..							
Middle Flat do do ..	..	600	..	18,000	..	..	..	..	..	..							
Corowa do do Corowa ..	..	..	..	25,569	..	..	..	..	..	..							
Riverina Frozen Meat Co. Deniliquin (Oddy and Son)	125	2,500	..	60,832	..	..	..	..	..	..							
H. Ricketson's Boiling-down ..	..	..	..	151,139	..	..	..	..	..	..							
S. M. Carew's do ..	..	..	..	45,133	..	..	..	..	..	..							
E. G. Cloughton's do ..	..	..	..	22,909	..	..	..	..	..	..							
John Stokes's do Moama ..	..	..	..	41,617	..	..	..	..	..	..							
Moama do ..	..	..	..	40,079	..	..	..	..	..	..							
Forbes do Forbes ..	80	4,200	400	21,000	..	..	..	..	..	..							
McGuggan's do ..	40	3,500	486	31,000	..	..	..	..	..	..							
Waterloo Station, Glen Innes ..	200	2,000	3	5,305	..	..	..	..	..	..							
Frazer's Boiling-down, Middle Creek ..	800	3,000	..	12,638	..	..	..	..	..	..							
Goonoowilba Establishment ..	400	4,000	20	7,950	..	..	..	..	..	..							
Ranger's Valley (private) ..	300	3,000	..	16,096	..	..	..	..	..	..							
Towrang (W. W. Wheatley), Goulburn	50	1,000	..	4,422	..	..	..	..	..	..							
Ramorie, Grafton ..	..	..	..	..	..	..	..	..	..	..							
Menindie Boiling-down, Freezing, & Meat Preserving Works	150	3,500	..	171,095	..	..	..	..	..	..							
Beri Boiling-down, Molong ..	40	600	82	9,990	..	..	..	..	..	..							
Burravong Boiling-down ..	20	300	..	10,000	..	..	..	..	..	..							
Buckinbah ..	13	200	..	4,000	..	..	..	..	..	..							
Barham Boiling-down (W. H. Juncker), Moulamein	..	240	..	2,286	..	..	..	..	..	..							
Do do (J. Johnston) ..	..	180	..	4,221	..	..	..	..	..	..							
Australian Chilling and Freezing Co. (Limited), Aberdeen, Murrumbidgee	200	2,500	..	90,000	..	..	..	..	..	..							
Riverina Chilled Meat Works, Narrandera ..	30	2,000	27	23,203	30	800	262	112,205	..	..							
Namoi Refrigerating, Preserving, and Boiling-down Co., Narrabri ..	80	2,000	..	87,523	40	600	1,340	15,279	..	..							
Queanbeyan Wool and Manufacturing Co., Queanbeyan ..	250	3,000	66	28,820	..	..	..	..	..	..							
Gunnedah Chilling and Boiling-down Works, Tamworth ..	..	3,000	..	7,000	100	1,400	..	..	..	..							
Lake Albert Boiling-down, Wagga Wagga ..	..	1,000	..	13,000	..	..	..	..	..	..							
Lake Victoria do Wentworth ..	..	400	..	8,750	..	..	..	..	..	..							
C. Jones, Yass Boiling-down, Yass ..	12	100	..	8,000	..	..	..	..	..	..							
The Young and Districts Chilled Meat and Produce Storage and Export Co. (Limited), Young ..	100	1,000	..	13,162	40	500	10	4,494	..	..							
The Pastoral Finance Association (Limited), North Sydney ..	..	..	..	..	..	..	..	..	..	..							
The Sydney Meat Preserving Co. ..	..	..	..	..	..	..	..	..	..	..							
The Grazier Meat Export Co. at—	..	..	..	..	..	..	..	..	..	..							
Nyngan ..	100	2,000	..	128,644	25	500	..	..	..	..							
Worri's Creek ..	120	2,000	..	..	30	600	..	..	..	..							
Carathool ..	..	2,000	..	..	..	600	..	..	..	..							
Dubbo ..	150	2,500	..	..	56	1,000	..	..	..	..							
Geddes, Burt & Co. (Limited), New South Wales Government Meat Markets, Darling Harbour.	..	..	..	..	..	..	..	..	..	..							
Do Fenterfield ..	60	600	..	..	40	500	..	..	..	..							
Fresh Food and Ice Co., Pyrmont Ice Works ..	..	..	..	..	50	1,500	..	..	..	..							
	2,920	59,420	1,244	1,298,682	451	8,700	1,900	213,437	500	9,000	2,843	976,037	625	9,400	25,444	1,388,370	

*Total Capacity of the Works in the Colony.*

Capacity for Boiling per diem—2,920 Cattle or 59,420 Sheep.	Capacity for Boiling per annum—876,000 Cattle or 17,844,000 Sheep.
Do Chilling do 451 do 8,700 do	Do Chilling do 135,300 do 2,610,000 do
Do Freezing do 580 do 9,000 do	Do Freezing do 17,700 do 2,700,000 do
Do Preserving do 625 do 9,400 do	Do Preserving do 187,500 do 2,820,000 do

Chiefly for private use; very little done for the public.  
For private use; twenty cattle only treated for the public.

From 8 July to 31 December.  
From 1 Jan. to do  
do do do  
do do do

In course of erection.

Sheep treated since 1st July.  
When works completed capacity 1,000.

Leased for seven years by the Pastoral Finance Co.

Merely a station plant.

\* Including lambs.

Has storage capacity for about 20,000 sheep.

Has storage capacity for 75,000 sheep, or equivalent in beef.

## WHAT ARE THE BEST SHEEP TO EXPORT AND HOW SHOULD THEY BE FATTENED.

## I. MISTAKEN IMPRESSION REGARDING DEMAND FOR MERINO MUTTON IN ENGLAND.

I think it necessary before going more directly into the discussion of these questions to remove the wrong impressions arising from statements which have appeared oftener than once in the Press to the effect that as the operatives in Lancashire and the Midland Counties of England preferred small Merino sheep to the Crossbred, it was not therefore necessary to cross our Merinos with the English sheep to obtain paying prices for our mutton in England.

It is no doubt the case that under certain circumstances the preference mentioned is shown and that small sheep sell generally better in the Midland Counties than elsewhere, but to say as one of the writers to whom reference is here made does "that this is a revelation which upsets the belief so strongly held that the sheep of this Colony (evidently meaning the Merinos) are not as valuable weight for weight for food supply as the Crossbred is a very great mistake."

As to the preference referred to, I would explain that as these operatives cannot afford the price paid for first-class frozen mutton they do not purchase it. They content themselves as a rule with second-class Merino mutton which has little fat, and therefore more economical giving as it does a larger proportion of red meat for the money, and this class of mutton when procurable by the retail butcher at a comparatively low price (one, however which cannot possibly pay the breeder) suits both him and the operatives. But at times a scarcity occurs of this class of mutton on which the price goes up; and as it would not then leave the butcher a sufficient margin of profit to buy this class of mutton, he purchases third rate heavy coarse over fat Crossbred New Zealand mutton which is all, but pure Lincoln or Leicester weighing per sheep perhaps 80 lb. to 90 lb. It would never pay him to buy first-class Crossbreds. He would scarcely even venture to purchase second-class; for in that case he would be supplying his customers with a superior article to that with which they were usually served, and they would not afterwards be content with second-class Merinos.

This being the case it is not hard to understand why the Lancashire Operatives prefer the small comparatively lean Merino mutton to the coarse fat New Zealand Crossbreds, especially as the extra fat which these sheep carry is in a large measure sheer waste.

To conclude as some of these writers do that even the prime 50 lb. Merino wether not to speak of second-class Merinos would bring as good a price per lb. as the 55 lb. to 60 lb. or even the 62 lb. Crossbred is altogether a mistake, and they had only to consult the weekly circulars issued during the last six or eight years by such firms as Nelson Bros. and Wedell & Co., London, to see that during that time, there has been a steady settled difference (which still exists) of more than 1d. per lb. in favour of the Crossbred. This explains the fact that while in New South Wales our sheep-owners have had hard work during recent years to make an average of from 8s. to 9s. for their 3 to 4 year old prime wethers, their fellow owners in New Zealand have been getting an average of from 16s. to 18s. for theirs at less than 2 years old. It is true that the quotations for Australian frozen mutton have within the last few years been coming somewhat closer to the New Zealand Crossbreds than formerly; but this it is believed is due less to the increased value of the Merino mutton than to the fact that both this Colony and Victoria have been sending away a good many Crossbreds, which have not been quoted as such, and being mixed up with the Australian Merinos have, through realising higher prices, helped to raise the general average of Australian mutton.

To do justice to our Australian Crossbreds and let breeders know what each class of sheep really brings in the London market, they should be quoted separately from the Merinos as they are as a rule first crosses and should when in really good condition be very prime both as regards the quality of the mutton and the weight, running as they would between 55 lb. and 60 lb. (the most desirable sizes) and being a combination of the valuable qualities of the Merino and English mutton sheep, a cross which without doubt makes better mutton than a great deal of the New Zealand, where the sheep now have a very large proportion in them of the English blood and comparatively little Merino, and therefore in many cases make coarser and less sweet mutton than first crosses.

Referring again to the statements here alluded to it is not questioned that the demand existed, but I think it will be gathered from the evidence which as here afterwards adduced as to the price of Merino mutton in England during the first six months of the present year that it could not possibly have been a paying one so far as our sheep-owners are concerned; and that of course is the real question.

## II. CROSSBRED AND MERINO MUTTON CONTRASTED.

## 1. Average English prices from 1st January to 30th June last.

What I have stated with respect to the Merinos and Crossbreds will be more clearly seen by ascertaining the prices quoted for the two sorts of sheep during the first six months of the present year in the English market (which is, of course, the real test, the price of sheep for export regulating the market). Taking prime Merinos to weigh, say 50 lb., and prime Crossbreds 60 lb.—allowing the average prices quoted during the six months for the mutton of each kind of sheep, and adding a reasonable amount for the skins—supposing them to be full fleeced.

The following statement shows how this matter stands:—

		Crossbred.				£ s. d.		£ s. d.	
Prime fat 2-year-old wether	...	...	60 lb., @ 3½d.	=	0	18	1		
Skin—full fleece	...	...	...		0	4	6		
			Merino.					1	2
Prime fat four-year-old Merino wether	...	...	50 lb., @ 2½d.	=	0	10	5		
Skin—full fleece	...	...	...		0	4	6		
								0	14
									11
			Difference in favour of Crossbred	...				0	7
			...	...					8
			Add—As it takes four years before the Merino wether is sold as fat, and only two years to get the Cross-bred prime, that breed has to be credited with a second return in mutton, <i>i.e.</i> , 60 lb., @ 3½d.	=	0	18	1		
			Add also return for skin of second Crossbred	...				0	4
			...	...					6
			Total money difference in favour of the Crossbred	...				£1	10
			...	...					3

## 2. *Can any Rise in Price of Merino Wool alter the result here arrived at?*

There has been a considerable advance lately in the price of Merino wool, and it is hoped that it will continue to rise. But while this is the case there has also been an advance on Crossbred, and there is very little difference as yet in the value of what may be termed "good" Merino and "good" Crossbred wool.

Still it is believed that what with the all but universal use of English rams in the Argentine, the large increase of crossbreeding in the United States, and the heavy losses from the late drought of Merino sheep in this and the other Australian Colonies, the supply of Merino wool will next season be short, and the price of that class of wool is bound to rise, more especially if, as it is expected, there is to be a change in the fashions and finer fabrics worn by the ladies. But, notwithstanding this, and although there should next wool season be a rise of 2d. or 3d. per lb. on the Merino wool, and nearly that difference between the price of Merino and Crossbred, that would not put Merino sheep on country adapted for the Crossbred on anything like a level with that class of sheep, for even supposing there was the extreme difference of 3d. per lb. between the two kinds of wool, and the Merino fleece weighed 7 lb., that would not amount to half the cash difference which it has been shown exists in the return from the two sorts of sheep, leaving out of view the important indirect advantages of the Crossbred, afterwards referred to in this paper.

## 3. *The Advantages of the Crossbreds.*

Stated shortly they are:—

- (1) Prime Crossbred mutton is worth in England more than 1d. per lb. than prime Merino, and that on a 60-lb. wether is 5s. at least.
- (2) Taking the age when a Merino wether is usually sold, *i.e.*, four years, the Crossbred, by being prime at two years or under, in that time gives a return of about 120 lb. prime mutton and two skins, and the Merino only 50 lb. and one skin.
- (3) The Crossbred suffers much less in a low or glutted market than the Merino.
- (4) The breeding of Crossbred fat lambs pays very much better than breeding Merino lambs.
- (5) The by-products of the Crossbreds are much more valuable than the Merinos; and
- (6) By breeding Crossbreds, and supplementing the natural pasture with cultivated food, a successful rotation of crops can be established, and the deterioration and exhaustion of the soil now going on by continual cropping without manure prevented.

## 4. *Objections to Crossbreds.*

- (1.) They are hard to keep in their paddocks.

The objection most frequently brought against the Crossbreds is that they are hard to keep within the fences; but this is by no means an insuperable obstacle to crossbreeding; and if the New Zealand graziers and farmers could overcome that difficulty as they have done there is no reason why ours should not master it too seeing the inducement is so great. A fairly constructed 8-wire fence, with posts 10 feet apart, and a batten, or steel droppers, between the posts makes a perfectly secure fence for Crossbreds; and the difference in the cost between that and a good ordinary Merino sheep-proof fence would be more than recouped in one year by keeping Crossbreds, while a fence such as this erected for Crossbreds would last much longer than an ordinary fence.

- (2.) Crossbreds require cultivated food, which it would not pay to grow.

To secure the full extent of the advantages here claimed for the Crossbred it will of course be necessary, except where the natural pasture is very good, to supplement it with cultivated food; and it may be argued that the expense of this would counter-balance the advantages. But it will not be difficult to show that although the providing of cultivated food for the Crossbreds (Merinos would not give a sufficient return to cover the cost) would entail both labour and expense, Crossbreds will not only pay the expense and leave a profit, but will also enable the owners of the land put under crop to adopt a rotation which, while it yielded a fair return year by year for their work and outlay in the shape of large numbers of prime fat sheep, will also, as already stated, put them in a position to maintain and even improve the fertility of their land, and I will, I think, be able to show that this is the case.

## III. THE NECESSITY FOR A PROFIT-GIVING ROTATION OF CROPS.

### 1. *It is required both for Tillage and Stock-raising.*

The greatest want (the missing link), so far as stock-raising and tillage are concerned—and these are beyond all question the great producing interests of the Colony—is a profit-giving rotation of crops, for not only is this absolutely necessary to save our cultivated land from sterility and the owner from ruin, through continuous cropping without manuring, but it is equally necessary in order to insure the two most essential requirements in a remunerative and permanent export trade in meat, *i.e.*, the meat must be of prime quality, and a steady and constant supply must be insured.

It may perhaps be said that in some seasons it would be impossible to comply with these requirements. This is granted to a certain extent; but unfavourable seasons only occasionally occur, and we are a very long way from the position in which such an excuse for not making proper provision in the direction indicated can be accepted.

### 2. *Farming as it has been conducted and the result.*

Where a reliable rotation, which includes the proper cultivation of the land, and the application where necessary of a fair quantity of manure, had not been followed, and the land has been under tillage for a good many years, it will not only not grow wheat to a profit, but the crop of oaten hay, which it now likely produces, is low both in quantity and quality, and will, if the present wasteful and ruinous system of cropping year after year without manure or cleaning be continued, become worse and worse through the deterioration of the soil and the large percentage of useless weeds that grow with the hay.

This style of farming—if it can be called farming—has all but ruined thousands of acres in the Campbelltown and Camden districts, where land which at one time yielded 20, 30, and even in some cases 40 bushels of wheat to the acre, now only gives an average return of perhaps half a ton of inferior oaten hay. Nor is there any wonder that this is the case, when we recollect that the land has been cultivated more or less every year for perhaps forty years, and seldom or never has any manure been applied to it, nor has it even been properly tilled.

The same sort of farming utterly impoverished millions of acres in the Eastern States of America, where, although scientific skill and capital have been again and again applied to it, and all sorts of manures been tried, the land cannot now be restored to anything approaching its original fertility.

### 3. *An imperfect system of Fallow adopted in some cases.*

It is true that in these Colonies farmers in a good many instances, in order to prevent their land from being entirely ruined by continuous cropping, and as a substitute for manure, plough it up in spring, and allow it to remain fallow for two or three years. But soon after it is ploughed the land in ordinary seasons gets overgrown with weeds, which have to be got rid of by crowding the land with sheep; the sheep eat out the weeds, and in this way and with two or three years' rest, the land has so far recovered, when it is again broken up, and another, or perhaps two other, crops of wheat are taken, after which it is again fallowed and the same process repeated. Any one, however, will see that this is a slovenly and wasteful style of farming, though better than keeping on year after year with continuous cropping, and one that must eventually lead to the complete deterioration of the land; while if it were properly cultivated, a moderate quantity of manure used where necessary, and a reliable rotation, such as that practised in New Zealand, of roots or other green crop, followed by cultivated grasses, were adopted, or if the land were laid down in lucerne, not only would its fertility be preserved, but it would give very much better returns than it now does under the system I have here condemned.

### 4. *The proper cultivation of the Soil and production of food for Stock.*

What is wanted, therefore, more particularly in districts where crop after crop has for years been taken off the same land without cleaning or manure, is that a suitable rotation should be adopted and that a stop should be put as speedily as possible to this wasteful and lazy system of tillage, whether the occupier of the land be the proprietor or not. This caution is specially addressed to those landlords who, for the sake of the comparatively high rents they have been receiving, are allowing their tenants to ruin the land. They should insist upon a proper rotation though its enforcement should at first be attended with a somewhat diminished rent.

It would be well too that all those owners of land who are now allowing it to be cropped on terms should keep in view—as some of them are doing—the danger of cropping it year after year without a proper rotation; and if it cannot be let with that condition, they should take it again into their own hands and adopt a safe rotation of crops.

### 5. *How the Food is to be grown and where.*

(1) By the adoption of the system now all but universally followed in New Zealand of growing roots, green crops and English grasses and feeding them off on the ground with sheep: or (2) by taking (say) two crops of wheat off new land keeping it thoroughly clean and laying it down with lucerne: or (3) by following systems (1) and (2), but assisting the crops with moderate quantities of manure.

Course (1) would be best adapted for districts such as New England, Bathurst, Orange, Goulburn, Braidwood, Queanbeyan, Monaro, Yass, Tumut, and the Upper Murray, that is in the colder and more temperate portions of the Colony, and while course (2) would also be suitable for the alluvial land in the warmer portions of the districts mentioned, this course would, however, be specially adapted for the drier and warmer portions of the Colony where the subsoil is favourable. Lucerne growing has proved a great success in the country between the Billabong and the Murray. Course (3) again might be followed in any portion of the Colony where the land will pay to cultivate.

If course (1) or (2) were adopted by owners especially in the Eastern side of the Colony where the country was adapted for it, they would be put in a position not only to breed and fatten large numbers of Crossbred sheep and lambs, and make them thoroughly prime at an early age, but they would also be able to do a great deal more than they now can in keeping up a steady supply of first-class sheep and lambs for export, a most essential matter for the success of the Export trade in meat.

Above all it would put our farmers and selectors in a position to breed and fatten Crossbred lambs which, as a rule, pay better than sheep, and in the long run it would in most cases pay them best to consume their crops on the ground, with sheep which would thus manure it, and save it from being run out; or they might devote themselves entirely to buying store sheep and fattening them which under ordinary careful management would leave a good profit where the sheep are really made prime.

### 6. *The cultivation of the land in the upland districts would reduce the prevalence of Fluke, Worms, and Foot-rot.*

Besides the reasons already adduced for the adoption of a reliable system of rotation, there is still another most important consideration for its adoption in the upland and colder portions of the Colony: it is that the cultivation of the land would effectually free it of surface water, and besides growing nutritious food for the sheep, would thus remove what are now the seed-beds of fluke, worms, and foot-rot, and be the means of saving many thousands of pounds now annually lost to the Colony through the excessive, and to a large degree preventable, prevalence of these ailments. This will be evident when it is recollected that on a great deal of the land best adapted for tillage in the higher lying and colder portions of the Colony the sheep are notoriously subject to these diseases, and they are so mainly through the extensive tracks of really good land there having the hollows and gullies more or less covered with surface water, to which the sheep are enticed by the freshness and verdure of the grass, but where they not only get innutritious food, but with that the germs of the diseases to which allusion has been made.

## IV. STOCK-RAISING AND TILLAGE MUST BE COMBINED IF A PAYING TRADE IN FROZEN MUTTON IS TO BE ESTABLISHED.

### 1. *The importance of paying Export Trade to our Sheep-owners.*

While calling attention to the advantages of breeding Crossbreds for export where the climate, land, and circumstances admit, I do not forget that Australia—and especially the New South Wales portion of Australia—is the great Merino wool-producing country of the world; that by far the larger portion of it is better adapted for Merinos than for Crossbreds; and that there is every prospect of Merino wool advancing in price, while there is a likelihood of Crossbred being lower. But, although this is the case, it has to be borne in mind that frozen mutton can now (which it could not be some twelve or thirteen years ago) be nearly as easily put on the English market as wool, and that therefore it is a matter of the highest importance that our sheep-owners, with a surplus—in ordinary favourable seasons—of some four or five million sheep, should obtain a paying price for their frozen mutton. We have, however, to confess that, although our neighbours in New Zealand have for the last twelve or thirteen years been obtaining very remunerative prices for their mutton, we as a rule, so far as our sheep-owners are concerned, have been exporting at a loss, and the reason is plain: We have not been shipping Crossbreds,

Crossbreds, the only kind of mutton which, as a rule, makes paying prices in the English market; and this again has arisen through our sheep-breeders in country adapted for Crossbreds clinging to the Merino for the sake of the wool and neglecting the production of mutton, which it is now quite apparent to those who have given the subject any consideration could be carried on in the portions of the Colony I have indicated with nearly, if not quite, as much success as in New Zealand; and if the agricultural settlement of the Colony is to be a success not only in the production of export mutton, but also of dairy produce, cultivated food must be grown to an extent not hitherto attempted. In other words, the marriage of stock-raising and tillage must take place, a consummation which the Hon. the Minister is so earnestly endeavouring to bring about.

2. *The highest authorities on the Meat Trade in favour of Crossbreds.*

In support of the views here advocated, more especially as to many parts of this Colony being well adapted for the production of Crossbred mutton, and the advantages which would accrue to those of our breeders who take to the business in a careful and systematic manner, I cannot do better than quote from the excellent practical paper prepared by Mr. W. A. Benn, manager of the Aberdeen Chilling and Freezing Company, and read by Mr. Fetherstonhaugh at the Pastoralists' Conversazione, held at the Exchange on 9th July last. There is no higher authority in the Colony than Mr. Benn, and his statements were fully endorsed by Mr. Fetherstonhaugh. The quotation is to the following effect:—

"New Zealand is a country absolutely incapable of maintaining any exports or even of providing for local requirements in the way of fat stock without artificial feed. It is a fact that all the stock exported are fed on roots, fodder, and cultivated grasses, which entail a cost to graziers of 20s. per acre per annum for cultivation. Consider also that the fee-simple of the land is not less on an average of £6 per acre, large areas being worth £10 per acre; and reckoning interest at five per cent. only, we have the fact that it pays the New Zealand grazier to expend not less than 25s. per acre annually to carry an average of about three sheep to the acre. Contrast this position with that of the New South Wales grazier, to whom Providence is so generous that in good seasons, which far outnumber the bad ones, he has absolutely no expense under the two heads mentioned, beyond a small interest charge on land costing, on an average, not more than 40s. per acre, and who, as a rule, prefers to trust in Providence for feed instead of conserving the water and the feed which go to waste in a good season."

Contrasting again the Merino and Crossbred, Mr. Benn said—"In New Zealand the Merino wether does not figure as an export, but supplies the local market with a lower class of mutton than could be supplied from prime Crossbreds fit for export. Merino wethers do not make, on an average, as much in New Zealand at the Metropolitan Markets as they do at Homebush. In fact the market reports show that on the same sale day Crossbreds will make 14s. to 15s. for 55 lb. to 60 lb. sheep (for years they made from 15s. to 18s.), while Merino wethers of very little less weight only make 7s. to 9s., thus clearly emphasising the fact that the exporters of New Zealand do not reckon on realising within one penny per lb. or more for Merino mutton in the home market as compared with what they can fairly calculate on getting for good Crossbreds."

3. *The change from Merino to Crossbred should be gradual.*

In bringing the advantages of the Crossbreds under notice, it is not recommended that those owners, even where the land is well adapted for crossbreeding, should at once put English rams to their Merino ewes. The change should be a gradual one, for fresh paddocks will have to be fenced off—the existing fences will have to be made crossbred proof—and other arrangements will have to be carried out with the view to the efficient working of the new system which it is proposed to adopt. Besides, all owners with considerable numbers of sheep taking to crossbreeding would still have to keep a portion of their Merinos to enable them to keep on breeding first crosses, for the first cross is the very best mutton that can be produced, and mutton that if care be taken to have it prime at an early age (under two years if possible) when put on the market will eventually bring as high a price as Canterbury, the best New Zealand mutton, combining as it does the best qualities of the English and Merino mutton, while at about two years old it would be just the weight which is required in first-class sheep.

As to the number of this class of sheep which the Colony should produce, that, I think, is easily answered: We should breed and fatten sufficient Crossbreds to meet the requirements of our export trade in frozen mutton, as we should export few or no Merinos, for when exported they, in nine cases out of ten, have left next to nothing to the sheep-breeder for his share in the transaction.

To be in a position again to provide a sufficient number of Crossbreds for export—this might be brought about in the course of a few years if the owners of properties adapted for crossbreeding, carrying (say) 10,000 sheep and upwards were to begin in a tentative way by putting English rams to the full-mouthed ewes, and taking the last crop of lambs from them as Crossbred; and if holders of smaller sheep, properties and selectors were to take to keeping Crossbreds, and especially to breeding Crossbred lambs, they would, by supplementing the natural pasture with cultivated food, make much better returns (the trouble of keeping Crossbreds within the fences notwithstanding) than they are now doing with Merinos. In this way we would, before long, be able to put on the English market annually a million of Crossbreds; for owners would, as a rule, fatten maiden ewes as well as wethers, and would not, unless where they were turning their attention the longer to the breeding of fat lambs, breed from the Crossbred ewes. Then the export of a million would in a very few years, with the increase in the carrying capacity of the Colony through the extension of the area under cultivation for stock, increase to a million and a half and before long to two millions, at which number the proportion of Crossbreds to the cast might be put at (say)  $\frac{1}{4}$ th of the whole, as shown by the following statement, supposing that the sheep would again number 60,000,000.

4. *Tentative Statement of the Sheep in the Colony three years hence, and their cast and its disposal.*

The cast (say) on 60,000,000 sheep (say)	...	...	...	...	...	10,000,000
Merinos slaughtered for food in the Colony	...	...	...	...	3,000,000	
"    canned	...	...	...	...	1,250,000	
"    taken to other colonies	...	...	...	...	600,000	
"    and Crossbreds (boiled down)	...	...	...	...	1,250,000	
"    "    losses through deaths, &c.	...	...	...	...	1,650,000	
Merinos exported frozen	...	...	...	...	250,000	
Crossbreds	...	...	...	...	2,000,000	
					-----	10,000,000

While

While Merinos as a rule do not pay to freeze, there will, of course, be times when prime sheep of this class would do so, and will no doubt be shipped. For canning, however, the Merino is preferable to the Crossbred, and there will be a better demand for Merinos for that purpose and for home and colonial consumption when the markets are relieved to the extent they will then be by the extensive shipments of frozen Crossbreds.

#### BRANDING MEAT FOR EXPORT.

A very simple, practical, and effective system of marking meat for export has been patented by Robert Prendergast, Merioola, Ocean-streef, Woollahra, in all the colonies.

It consists of a block in which knives about the size of a pen-knife are set in any shape (either in that of letters, signs, characters, or numerals) according to the brand which is required to be made, on the same principle as the needles are set in a Tattoo brand. This block is fixed in a light iron frame with a spring at the back, and is operated with on the meat before it is set by putting the frame on the portion of beef or mutton to be marked (the portion with red outer cuticle) and giving a short handle attached to the block, and standing out from the frame, a smart knock with the hand. This has the effect of driving the block, or at least the knives on the block, out beyond the frame, and by cutting into or pricking the beef or mutton the points of the knives make the desired brand on the red cuticle of the meat, and as the cuts open up as the setting goes on, a very legible clean brand which cannot be faked is left.

A very legible impression can also be made with the patent electric branding machine, but that, of course, is much more expensive.

It would, I believe, be a very great advantage to our stock-owners if our beef and mutton were all legibly and indelibly branded, for not only would our meat then be sold for what it really is, and consumers would, if it were as prime as it should be, come to understand that Australian meat is not the poor article which interested parties in England represent, and better prices would be obtained; but owners knowing that their meat would be marked, would be careful to make their cattle and sheep really prime before sending them to the works for slaughter and shipment.

#### DEFROSTING (ARTIFICIALLY THAWING) FROZEN MEAT.

Comparatively little has, during the year, been heard of this process in England before placing the meat on the market, but the reports which have been received from reliable sources speak favourably of it, and if the defrosting can be carried out at as low a figure as that quoted by Mr. Postle (whose patent and the test made with respect to it was noticed in my last annual Report),  $\frac{1}{2}$ d. per lb., there is every reason to believe that when proper arrangements are made at the stores at which the frozen meat is kept in England it will pay well to defrost first-class beef and mutton.

One reason for so little having been done in defrosting during the past year is perhaps the low prices which both Australian beef and mutton have been making in England, and perhaps also the scarcity (caused by general drought) of really first-class meat.

With the improvement in our pastures we have had an increase of Crossbred sheep, and with more care in making them really prime, and proper arrangements for thawing in connection with the stores in which our frozen meat is placed on being landed, there is a good prospect of a great deal more benefit being derived by our stock-owners by defrosting than they have yet obtained from that process.

#### MISCELLANEOUS.

##### *Cultivated Grasses.*

In twenty-nine districts cultivated grasses have been sown for pasture during the year, the most successful being lucerne, prairie, and rye.

##### *Number and Division of Runs.*

The number open or unenclosed runs in the Colony is 3,284; the number enclosed is 37,645; the number partially sub-divided is 14,954; and the number properly sub-divided is 21,630.

##### *Improvements, Fencing, Dams, Tanks, and Wells.*

The number of miles of fencing throughout the Colony is estimated as follows:—772,688 miles without wire netting, at an average cost of (say) £39 2s. 3d. per mile, amounting to £30,223,750, and 48,410 miles with wire netting, average cost at (say) £67 16s. 4d. per mile, amounting to (say) £3,282,994.

The number of dams used for stock purposes is estimated at 64,418, at an average cost of (say) £101 7s.; number of tanks, 41,811, average cost of each, £155 4s. 6d.; and the number of wells used is estimated at 4,198, at an average cost of £184 3s. each.

Cost of fencing, £33,506,744; cost of dams, £6,528,322; cost of tanks, £6,490,106; cost of wells, £772,106; making a total of £47,297,278, as representing the amount expended by way of improvements, &c.

##### *Plants and Weeds.*

##### *Prevalence.*

In fourteen districts *trefoil burr* grows to a very large extent; in eight districts, to a considerable extent; in twenty districts, to a slight extent; and in twenty-three districts there is none reported.

In twenty-nine districts *variegated thistle* is reported to a slight extent; in nine, to a considerable extent; in ten, to a very large extent; and seventeen districts are reported as free from it.

In twenty-eight districts *black thistle* is reported to a slight extent; in twelve, to a considerable extent; in seven, to a very large extent; and eighteen districts are reported to be free from it.

In eight districts the land is reported as being infested to a very large extent with *Bathurst burr*; in sixteen districts, to a considerable extent; in twenty-nine districts, to a slight extent; and in twelve districts the land is not infested.

In twenty-four districts other noxious weeds grow to a slight extent; in ten districts, to a considerable extent; in seventeen districts, to a very large extent; and in fourteen districts there is none reported.

## Legislation for Noxious Weeds.

Legislation is urgently required for dealing with noxious weeds and plants, more especially the Bathurst burr, the prevalence of which is inflicting very serious loss on travelling stock.

## Cost of clearing Commons, Reserves, &amp;c., of Weeds.

The cost of clearing the Commons of noxious weeds throughout the Colony is estimated by inspectors at £71,288; the police paddocks, £4,134; the travelling stock reserves and droving roads at £221,115; amounting in all to (say) £296,537.

## PREVENTION OF SCAB IN SHEEP ACCOUNT.

A detailed statement of receipts and expenditure by the Department in connection with the above Fund for year 1895 will be found in Appendix K hereto, and will be published annually in the same form.

## APPENDIX A.

## RETURN of Stock in the several Sheep Districts.

Districts.	Year 1894.					Year 1895.				
	Acreage.	Horses.	Cattle.	Sheep.	Pigs.	Acreage.	Horses.	Cattle.	Sheep.	Pigs.
Albury .....	874,216	7,081	16,308	783,544	.....	887,296	7,086	17,106	767,797	.....
Armidale .....	2,927,857	12,330	96,812	1,453,586	.....	3,177,687	12,478	92,206	1,131,017	.....
Birranald .....	3,565,308	2,402	4,448	618,796	.....	3,096,576	2,357	3,845	689,682	.....
Bathurst .....	1,515,394	15,392	50,536	575,890	.....	1,447,867	14,818	43,351	527,112	.....
Berrina .....	263,027	4,100	28,836	37,105	.....	266,841	3,870	27,061	43,313	.....
Bombala .....	511,754	3,624	23,227	436,710	.....	557,058	3,357	19,914	387,861	.....
Bourke .....	8,995,314	8,639	14,541	2,436,226	.....	8,167,120	7,480	12,644	1,506,699	.....
Braidwood .....	384,761	5,352	45,193	61,867	.....	390,304	5,113	38,570	56,379	.....
Brewarrina .....	3,777,242	4,765	16,164	1,371,470	.....	3,715,447	4,824	11,177	1,155,968	.....
Broulee .....	261,346	3,362	32,446	1,033	.....	256,890	3,183	28,424	1,322	.....
Cannonbar .....	3,488,545	6,446	21,418	1,530,589	.....	3,522,332	6,619	22,454	1,157,629	.....
Carcoar .....	1,113,171	8,483	27,082	799,468	.....	1,058,182	7,970	22,385	678,635	.....
Casino .....	1,296,497	9,716	138,807	907	.....	1,308,360	9,426	135,289	933	.....
Cobar .....	6,761,640	3,317	5,600	1,311,647	.....	6,537,654	2,705	5,353	1,001,888	.....
Condobolin .....	5,769,271	5,536	11,336	1,837,408	.....	4,992,517	5,105	9,841	1,346,358	.....
Cooma .....	1,693,945	8,969	57,378	874,215	.....	1,634,061	9,234	48,161	724,341	.....
Coonabarabran .....	2,293,061	5,723	14,998	1,159,561	.....	3,497,595	5,816	14,156	936,128	.....
Coonamble .....	2,713,004	7,269	21,842	1,882,465	.....	2,783,279	7,131	19,484	1,675,505	.....
Corowa .....	776,044	3,671	6,320	697,636	.....	706,820	3,907	6,606	707,210	.....
Deniliquin .....	2,231,379	6,022	17,147	1,996,315	.....	2,218,100	6,091	13,301	1,309,882	.....
Denman .....	299,500	4,272	34,329	46,948	.....	303,355	4,022	27,354	32,451	.....
Dubbo .....	3,854,665	14,135	37,576	2,168,830	.....	3,456,206	14,333	30,249	1,956,102	.....
Eden .....	446,817	4,244	51,943	2,922	.....	455,395	4,069	47,891	2,093	.....
Forbes .....	2,797,456	11,838	39,049	2,180,808	.....	2,756,989	11,108	27,948	1,739,497	.....
Glen Innes .....	2,119,594	14,617	132,783	693,073	.....	2,096,554	13,307	90,703	520,746	.....
Goulburn .....	926,015	9,806	62,413	278,739	.....	940,668	9,123	53,900	225,617	.....
Grafton .....	864,950	17,493	77,136	2,847	.....	883,494	16,903	70,769	1,832	.....
Gundagai .....	1,254,118	10,773	64,310	1,054,595	.....	1,287,909	10,220	45,593	963,640	.....
Hay .....	4,635,291	6,935	9,509	1,758,757	.....	3,947,857	6,734	7,519	1,608,722	.....
Hillston .....	3,758,309	3,206	4,811	934,429	.....	3,797,071	3,141	4,602	750,553	.....
Hume .....	1,298,604	5,796	25,562	554,888	.....	1,167,165	5,650	28,923	606,518	.....
Ivanhoe .....	5,333,766	2,020	2,309	891,616	.....	5,470,931	1,910	2,272	740,703	.....
Jerilderie .....	1,272,697	3,945	5,765	851,660	.....	1,279,226	4,300	5,600	860,331	.....
Kimba .....	280,699	7,865	61,489	1,913	.....	296,469	7,242	57,449	1,704	.....
Maitland .....	582,927	14,306	69,192	2,407	.....	609,160	14,901	64,583	2,038	.....
Meniadié .....	9,492,045	4,211	7,576	1,096,948	.....	9,623,806	3,903	6,466	928,836	.....
Merruwa .....	732,338	5,660	17,828	513,075	.....	695,658	5,099	15,589	459,327	.....
Milparinka .....	6,324,346	2,843	6,771	928,672	.....	5,947,369	2,843	6,540	735,812	.....
Molong .....	1,643,915	11,172	24,437	1,289,864	.....	1,769,937	10,568	19,304	1,083,811	.....
Morée .....	2,991,472	9,344	70,748	1,462,495	.....	2,981,351	9,378	61,268	1,036,310	.....
Moulamein .....	1,611,811	1,581	9,880	635,024	.....	1,572,993	1,566	4,924	682,409	.....
Mudgee .....	1,513,394	11,762	49,708	746,433	.....	1,518,996	10,987	43,269	680,808	.....
Murrumbidgee .....	778,120	8,302	31,802	549,499	.....	821,549	7,803	31,445	470,331	.....
Narrandera .....	2,840,456	5,112	16,338	1,520,232	.....	2,855,156	5,115	13,692	1,317,825	.....
Narrabri .....	1,410,650	6,326	20,598	795,275	.....	1,472,228	5,421	18,463	647,400	.....
Pietermaritzburg .....	227,751	4,311	29,699	1,883	.....	215,967	3,916	24,897	2,383	.....
Pilliga .....	1,540,725	3,206	18,191	698,753	.....	1,379,070	2,782	14,532	529,709	.....
Port Macquarie .....	494,328	7,951	44,715	795	.....	497,825	8,842	45,632	798	.....
Port Stephens .....	605,880	7,402	52,100	1,187	.....	942,368	7,052	46,341	991	.....
Queanbeyan .....	809,479	4,873	30,774	504,079	.....	483,706	4,442	26,589	469,741	.....
Singleton .....	536,106	7,326	57,320	50,817	.....	429,428	5,701	44,751	27,396	.....
Sydney .....	212,000	21,723	20,265	7,010	.....	212,105	22,263	20,890	7,350	.....
Tamworth .....	4,159,221	25,779	105,965	2,851,245	.....	3,948,738	25,139	87,728	2,196,313	.....
Tenterfield .....	1,599,004	8,360	92,152	183,264	.....	1,698,465	7,733	81,590	143,701	.....
Tweed-Lismore .....	228,647	7,090	30,029	277	.....	237,266	7,293	33,142	230	.....
Urana .....	1,023,093	2,630	4,218	956,232	.....	972,760	2,849	5,681	811,601	.....
Wagga Wagga .....	2,797,815	14,091	39,137	1,986,133	.....	2,694,374	12,943	34,958	1,801,008	.....
Walgett .....	5,473,628	7,919	20,283	2,407,590	.....	4,916,880	8,406	18,664	2,147,483	.....
Warraring .....	5,868,239	2,332	3,639	875,620	.....	5,757,868	1,824	3,115	608,250	.....
Warialda .....	3,113,930	12,686	73,350	1,503,540	.....	3,210,562	12,187	67,100	1,064,411	.....
Wentworth .....	6,625,371	2,208	3,252	623,031	.....	6,761,658	1,892	3,223	575,832	.....
Wilcannia .....	10,026,862	5,789	9,534	1,575,409	.....	10,090,135	4,653	7,803	1,228,674	.....
Windsor .....	196,683	7,604	17,557	1,903	.....	157,789	7,211	15,769	509	.....
Yass .....	791,337	5,591	21,512	501,386	.....	806,865	5,003	21,528	464,442	.....
Young .....	2,141,814	11,930	41,979	1,972,170	.....	2,210,790	12,007	42,302	1,735,791	.....
Total .....	158,230,199	507,068	2,290,112	56,977,270	273,290	156,424,097	482,459	2,023,768	47,617,687	221,597

Sir,

## APPENDIX B.

Sydney, 10 June, 1896.

I have the honor to report that, in accordance with your request, I left Sydney on the 26th May last for Inveralochy to examine into and report upon an outbreak of disease amongst the horses on the Inveralochy Estate, the property of Mr. W. Douglas.

The most prominent symptoms observed while the animals were at rest were a tucked-up appearance of the flank, coupled with knuckling over of the hind fetlocks, followed on enforced progression by a spasmodic action of the motary muscles, in many cases of all four limbs, inducing a peculiar gait similar (in some points) to a local nervous affection very prevalent in England commonly called "Stringhalt," but quite dissimilar in anything but jerky action, which seldom affects more than one limb, frequently due to local injury during castration. The animal's usefulness is not interfered with.

In this affection a decided wasting of the muscles of the thigh is observed, and in forced exercise especially marked in one or two year olds; the breathing is catchy and painful; the animal's condition being poor and unthrifty; extreme nervous debility and loss of muscular power are marked features. On *post-mortem* examination of a filly placed at my disposal by Mr. Douglas, there was an absence of abnormality or disease in brain and spinal cord or internal organs, with the exception of the liver, stomach, and portion of small intestines, the former somewhat congested and in the latter distinct evidence of inflammation of a sub-acute character, evidently the result of the presence of immense quantities of "nematoda," found both free and enclosed in cystic tumours, varying in size from a pea to a walnut.

I am of decided opinion that the cause of the disease is to be found in the intense irritation caused by these parasites producing perverted action and interference with digestion, bringing about extreme debility and nervous prostration.

The remedy I recommend is a more generous diet, and, when practicable, total change of pasture, together with the administration of anthelmintics and tonics as recommended by me in the Ivanhoe horses in 1893, viz. :—

Common salt	...	...	...	...	...	...	2 lb.
Powdered sulphur	...	...	...	...	...	...	2 "
Black antimony	...	...	...	...	...	...	1 "
Tartar emetic	...	...	...	...	...	...	$\frac{1}{2}$ "
Sulphate of iron	...	...	...	...	...	...	1 "

Dose:—Two tablespoonfuls for each horse, mixed in the feed, equal to 1-oz. doses.

The above can be varied by the administration of the following draught:—

Linseed oil	...	...	...	...	...	...	1 pint
Spirits of turpentine	...	...	...	...	...	...	2 oz.

for each animal every alternate day.

This disease is somewhat similar in effect to the disease in the district of Ivanhoe before referred to, only differing in external symptoms, such as loss of eyesight and paralysis, easily attributable to climatic influences and surroundings.

The country upon which these animals graze is of an undulating character and sandy nature, which, after seasons of drought, becomes barren of vegetation necessary for the sustenance of the animals, thus rendering the subject a favourable host for the ravages of the parasite, the embryo of which prevails in country of special character, and under the unfavourable seasons and circumstances before mentioned.

I have, &amp;c.,

A. E. G. ROBINSON, M.R.C.V.S.

To the Chief Inspector of Stock, Sydney.

Sir,

Sydney, 11 June, 1896.

In compliance with your further instructions, after completing my investigations at Inveralochy I proceeded to Braidwood and examined a number of horses on the premises of Messrs. Hassall, Roberts, & Royd, exhibiting symptoms similar to the Inveralochy horses, viz. :—

Emaciation; tucked-up appearance of the flanks; wasting or atrophy of the muscles of the thigh; accelerated breathing; and spasmodic tetanic contraction of both hind limbs, assimilating in some respects to stringhalt, but altogether different from that affection, which seldom affects more than one limb, never interferes with the animal's usefulness, and is frequently the result of injury during castration, and purely local.

*Post-mortem* appearances I found the same as Inveralochy horses, viz. :—

Sub-acute inflammation of stomach and small intestines; myriads of free and encysted nematoda worms, the cysts varying in size from a pea to a walnut.

The cause of the affection is undoubtedly due to the presence of these parasites, which, by incessant irritation, prostrate the nervous system, retard the proper assimilation and digestion of the food, thus producing subsequent muscular degeneration.

Treatment should consist in the administration of anthelmintics and tonics, removal, if possible, from the infected paddock to a better diet. As an anthelmintic and tonic the following mixture is to be recommended, viz. :—

Common salt	...	...	...	...	...	2 lb.
Powdered sulphur	...	...	...	...	...	2 "
Black antimony	...	...	...	...	...	1 "
Tartar emetic	...	...	...	...	...	$\frac{1}{2}$ "
Sulphate of iron	...	...	...	...	...	1 "

Doses divided into ounce doses and given in the feed, which may be varied by the administration of a draught every alternate day, composed of linseed oil (raw), 1 pint, and spirits of turpentine, 2 oz.

I would also recommend, where practicable, a top-dressing to infected paddocks of rough common salt or lime.

The country upon which these animals graze appears favourable to the development of low-life organisms, and is of an undulating character, having a sandy soil incapable of producing after severe drought vegetation necessary for the sustenance of the animals, thus inducing a condition of body favourable to the ravages of the parasites, and subsequent destruction of the vital forces.

In my opinion it is preventable by the exercise of intelligent care during an unfavourable season.

I have, &amp;c.,

A. E. G. ROBINSON, M.R.C.V.S.

The Chief Inspector of Stock, Sydney.

APPENDIX

## APPENDIX C.

REPORT on investigations made with reference to the mortality in Horses and Sheep which occurred at Wyvern, Groongal, Bringagee, and Benerembah Stations during the months of January and February, 1896.

## HISTORY.

*In the Horse.*

THE mortality was first noticed among the horses at Wyvern Station, a heavy draught horse being the victim. This horse was seen at 7:30 a.m., and appeared to be in good health, but at midday he was noticed to be down and in great pain. He died at 4:30 p.m. on the same day.

The mortality next occurred at Bringagee, in the "horse-paddock," where a saddle-horse was found dead. Since then, up to the end of February, Bringagee has lost 20 horses; Wyvern, 24; Benerembah, 10; and Groongal, 2. Thus the total number of horses that have succumbed is 56.

*In the Sheep.*

The mortality commenced at Bringagee, in a herd—some 700 head—of half-bred ewes running with the rams in the Park Hall paddock, where, on being driven, three of the rams and four of the ewes refused to move, and appeared to be in great pain. These seven sheep were carted to the home station, and died within twelve hours. The herd was then moved into the paddock immediately north—Craigend—and during the following two days no less than thirty (30) more died. The remainder were then removed to the No. 4 paddock, facing the river. This appears to have checked the mortality, as only twenty (20) more died within the following ten days. Among the rams, which had been separated from the ewes and placed in the Nyang paddock, twenty (20) Lincoln, and five (5) Merino died. The dead rabbits in this paddock were then collected and destroyed, the result being only two more rams died within a few days afterwards, and none since.

At Benerembah the mortality commenced in the middle of January. Some fifty (50) rams that had been running with the horses, who were also affected, died, thirty (30) of the number dying within three (3) days. Benerembah lost between sixty and seventy head.

Groongal lost about thirty (30) rams; while Wyvern lost but seven (7) sheep.

Roughly speaking, about two hundred (200) sheep, the majority of which were rams, succumbed.

## SYMPTOMATOLOGY.

*In the Horse.*

Attention is first directed by the animal standing isolated in a sheltered position, when such is available, disinclined to eat or to move.

In from six to twelve hours the animal begins to present a tucked-up appearance, and stands with head lowered and coat slightly "staring." On being made to move, he does so reluctantly, carrying the body rigidly and stepping with uncertain gait. If quietly approached in this stage, and on waiting until the excitement which your approach naturally causes subsides, the temperature is found to be elevated 1.5° to 2° F. above normal, pulse full and hard, mucous membranes injected, and the respiratory acts which are almost entirely costal are from 4 to 10 in excess to the normal number per minute. The animal is disinclined to eat, but will drink readily.

In another six to twelve hours the horse is experiencing an abdominal pain, which ranges from sub-acute to acute. He looks round to the region of stomach or flank, as the case may be, and paws; occasionally he gets down and rolls. The temperature now reaches 103° F. to 105° F., pulse 76 to 80 per minute and full, respiratory acts 28 per minute and markedly costal. The engorged capillaries of the eye stand out very prominently on the yellowish-tinged sclerotic. The sub-maxillary glands may be swollen. The animal now moves very uncertainly. At this stage constipation was very marked in some cases, while in others priapism was noticed.

In cases No. 2 and No. 4 ineffective attempts were made to micturate, due no doubt to cystitis. In cases No. 2 and No. 4 muscular tremor was also present in muscles at front of chest (pectorals), fore-arms, and thighs, and was concomitant with muscular rigidity affecting particularly those of the neck and back. The animal will now neither eat nor drink.

The next stage is one of collapse. The horse goes down and is unable to get up again. The temperature falls below normal, pulse 42 soft and full, respirations 30, mucous membranes deeply injected. The sclerotic becomes more yellowish in colour. The animal may now be handled without causing any excitement, and without any resistance being offered. All natural functions gradually become suspended; the animal sinks and dies some ten hours after having gone down.

*In the Sheep.*

As in the horse, the first symptom noticed is isolation and disinclination to move. They persistently lie on their sternum or breast-bone. Later on they show evidence of abdominal pain, sub-acute and acute. The leading symptoms are those of gastro-intestinal irritations. Their flanks have a hollow, sunken appearance. They are constantly gnashing the teeth and regurgitating; occasionally frothy mucus flows from the mouth. The sclerotic presents more of a cyanotic appearance. In time the sheep become extremely prostrated; lying on their breast-bones, with nose protruding and lower jaw resting on the ground; breathing heavily, in some cases actually panting, and show but little inclination to either eat or drink. The stage of collapse was not so well marked as in the horse. In one case a diarrhoea of a severe nature set in prior to death.

In both the horse and sheep there were various degrees of severity in each individual attack, running from mild and moderate to recovery, and from extreme to death, and the above symptoms were presented in direct proportion to the severity of the attack. Many of the sheep were simply "found dead."

## POST-MORTEM APPEARANCES

*In the Horse.*

Decomposition sets in rapidly; vessels engorged with dark-coloured blood, which did not readily coagulate; serous cavities all contained a small quantity of serous effusion; throat—pharynx inflamed; œsophagus or gullet apparently normal; stomach usually contained a large quantity of fluid, and but little solid matter. Its mucous membranes showed circumscribed erosions and slight ulcerations, or in milder cases patchy inflammation; intestines—the small intestines were inflamed and their lymphatic glands swollen, dark in colour and softened. The anterior portions of large intestines were inflamed, but the inflammatory signs

signs gradually disappeared as the bowels were traced backwards. The contents of the anterior bowels were either fluid or soft, and contained a number of worms (mostly *Str: Tetra-canthus* and *Asc: megalcephalus*), but the contents of the posterior bowels were dry and hard, and the pellets of feces in the rectum were thickly coated with mucous; liver—usually congested, but in some cases fatty; spleen—normal; kidneys—inflamed and softened; bladder—inflamed and distended with albuminous urine; lungs—congested and occasionally sub-pleural and inter-lobular oedema was present; heart—normal, and filled with soft dark blood clots; brain—meninges showed capillary engorgement.

*In the Sheep.*

Somewhat similar post-mortem appearances were found, with the following exceptions and additions:— Patchy inflammation in the 1st, 2nd, and 3rd stomachs were present in one or two cases, but, as a rule, these stomachs were normal. The 4th stomach was invariably inflamed, especially along the greater curvature. The small intestines were extensively inflamed, and the accompanying mesenteric glands softened and swollen and dark in colour. In the large intestines the inflammation extended further back than in the horse. In some cases the throat was very much inflamed.

In order to place beyond doubt that the mortality was not due to any contagious or infectious disease, the following researches and experiments were carried out, great care being taken to prevent any accidental contamination, and every antiseptic precaution was exercised in experiments B and C where inoculations were made.

- (A.) The blood from the veins, interior of heart, and from the spleen was prepared and stained and subjected to a careful microscopic examination without result.
- (B.) The blood (3 j = 1 drachm) from one of the most severe cases was injected into the peritoneal cavity of a healthy rabbit. On *post-mortem* examination some forty-eight hours afterwards, no departure from normal was found, not even an inflammatory area about the seat of inoculation.
- (C.) Two healthy wethers were inoculated on the inner aspect of the thigh with 3 j each of blood from a ram showing characteristic symptoms, without either of the wethers suffering any inconvenience or ill-health whatsoever.
- (D.) (1) Carcasses of rabbits collected from (a) paddocks where strychnine was used, and (b) paddocks where phosphorised pollard was used, in exterminating these pests; together with (2) a portion of the ingesta from the stomach and (3) portion of urine of brown colt (case No. 4) where strychnine was suspected, and (4) portions of the bowels with their contents intact of sheep in cases where phosphorus was suspected, were forwarded to the Chief Inspector of Stock for analysis.

DIAGNOSIS.

It is my opinion that the mortality was caused by the horses and sheep either eating the carcasses of poisoned rabbits, or in some instances eating the phosphorised pollard baits laid for the rabbits, the actual cause of death being gastro-enteritis, due to a poisonous irritant, namely, either phosphorus in some cases, or the septic ptomaines of putrefaction. In some cases, as in No. 4, symptoms of strychnine-poisoning were concomitant with those of gastro-enteritis.

REMARKS.

All the stations where the mortality occurred are badly rabbit-infested. To exterminate these pests poison is used in two forms: (1) Troughs containing the muriate of strychnine dissolved in water are laid in those paddocks where the usual water supply for the stock can be fenced in. The stock is removed, and these troughs laid outside the fenced-in tanks. (2) Phosphorus in combination with the sulphide of carbon mixed with pollard is laid in furrows in the form of pellets.

Owing to the drought we experienced last summer, the rabbit-poisoning operations were commenced as early as December, 1895. The drought continuing through the months of January and February, '96, all the natural fodder (grass, &c.) became scorched and dried up. The stock feeding on the dry fodder for some time developed a morbid or depraved appetite, and began to eat the dead rabbits, of which, on the authority of the managers of the stations and the Stock Inspectors for the districts, they partake freely. During a *post-mortem* examination on a ram that died showing characteristic symptoms, a piece of rabbit skin with fur attached was found in the first stomach.

In my opinion the chief sources of danger are to be found in:—

- (a) Overlooked pellets of phosphorised pollard lying about the paddock.
- (b) The entrails and their contents of dead rabbits.
- (c) The carcasses of rabbits that died in the troughs containing strychnine.

JAS. DOUGLAS STEWART, M.R.C.V.S.

An examination of the organs of different animals for strychnine and phosphorus gave the following results:—

- Portion of ingesta from stomach of brown colt contained traces of strychnine.
- Stomach and portion of large bowel of sheep, no strychnine.
- Internal organs of rabbit, no strychnine.
- Urine from No. 4 contains strychnine.
- Fluid from stomach of No. 4, no strychnine.
- Contents of small intestines of No. 4, no strychnine.
- Intestines of sheep containing ingesta, no strychnine.

The internal organs of rabbit were examined for phosphorus and for phosphorus acid. Neither was present, showing that if phosphorus had been administered it is now oxidised past certainty of detection. The other samples were consequently not examined for phosphorus.

10th June, 1896.

F. B. GUTHRIE.

APPENDIX D.

INFLUENZA IN HORSES.

(By E. Stanley, F.R.C.V.S., Government Veterinarian.)

*Character.*

It is a contagious equine fever, due to germinal matter invading the system, producing disastrous changes in the blood, which interfere with nutrition, excite congestion, and occasionally inflammation of important organs or tissues.

*Cause*

*Cause.*

The germs of this disease are always lurking about, and epidemics are due to exceptional climatic changes that have a lowering effect on the health of horses, and at the same time favour the vitality of the disease germs.

The worst cases are amongst hard-working horses in overcrowded sheds, with bad sanitary surroundings; next come fat horses, and the least susceptible are horses that are in good working condition, cleanly kept, and well cared for; if such have the disease at all it is in a mild form, and they speedily recover.

*Symptoms.*

In the onset loss of appetite, drowsy headache, pain in the limbs, general weakness; in many cases the eyelids are swollen, tears trickle down the face; there may be discharge from the nostrils, and occasionally coughing; the eye will be found scarlet and orange colour, the tongue furred, breath offensive, the heart beats feebly but quick, the pulse is small and weak, the dung is soft, and the urine high-coloured; there is a general rise of the bodily temperature.

As the disease progresses the symptoms will depend on its course, which is very variable, as the numerous names given to the disease indicate. The vital forces in many cases overcome the toxic effects and excrete the poison from the system; it is to assist this process that we have recourse to treatment.

*The Treatment.*

This should consist of rest, pure air, shelter from sun, rain, or wind, bran mashes, and cut green food with drachm doses of chlorate of potash, carbonate of ammonia, or nitrate of potash given in the drinking water; if the case has been taken early enough, and the surroundings are good, the fever will abate, and recovery be complete in a very few days.

Unfortunately many horses are worked at the commencement of the illness; then they are completely knocked up, and they present a variety of bad symptoms, owing to the mischief being located in individual organs, such as those of respiration, or the bowels, liver, spleen, lymphatic glands, or cerebro-spinal system. The location can only be diagnosed by the educated veterinarian, and every case should be treated to suit the nature and stage of the illness; dropsical swellings are a favourable indication, but time and patience must be allowed for recovery. No case is cured until the horse is playful at exercise.

## APPENDIX D.

*(By the Government Statistician.)*

## INCREASE and Decrease of Sheep, year ended 31st December, 1895.

Number of sheep, on 31st December, 1894	...	...	...	...	56,977,270
Lambs marked during 1895...	...	...	...	...	7,515,207
Number of sheep imported during 1895	...	...	...	...	420,374
					64,912,851
Slaughtered for food for local consumption (including sheep killed on stations) ...	...	...	...	...	2,777,803
Do for meat preserving ...	...	...	...	...	1,618,887
Do for freezing for export ...	...	...	...	...	1,021,006
Do for boiling-down in boiling-down works ...	...	...	...	...	2,279,512
Do do do on stations ...	...	...	...	...	378,871
Lambs slaughtered for food for local consumption	...	...	...	...	106,924
Total slaughtered	...	...	...	...	8,183,003
Exported during 1895	...	...	...	...	999,773
Killed by dogs	...	...	...	...	170,202
Loss by drought, ordinary mortality and missing sheep	...	...	...	...	7,942,186
					17,295,164
Total deduction	...	...	...	...	17,295,164
Number of sheep on 31st December, 1895	...	...	...	...	47,617,687
					47,617,687
Decrease on previous year	...	...	...	...	9,359,583

## APPENDIX E.

## AUSTRALIAN Stud Sheep offered for Sale by Auction in Sydney during the Year 1895.

*Australian Stud Sheep.*

	Number of Rams.	Number of Ewes.	Total.	
			Rams.	Ewes
By Messrs. Goldsbrough, Mort, & Co. (Ltd.), on account various New South Wales breeders.....	73	.....	.....	.....
Messrs. Goldsbrough, Mort, & Co. (Ltd.), on account various Tasmanian breeders.....	2,021	72	.....	.....
Messrs. Goldsbrough, Mort, & Co. (Ltd.), on account various Queensland breeders.....	9	.....	.....	.....
Messrs. Goldsbrough, Mort, & Co. (Ltd.), on account various New Zealand breeders.....	837	26	2,940	98
F. S. Weaver, Esq., on account various New South Wales breeders.....	197	11	197	11
Messrs. Pitt, Son, & Badgery (Ltd.), on account various New South Wales breeders.....	31	5	.....	.....

APPENDIX E.—continued.

AUSTRALIAN Stud Sheep offered for Sale, &c.—continued.

	Number of Rams.	Number of Ewes.	Total.	
			Rams.	Ewes.
By Messrs. Pitt, Son, & Badgery (Ltd.), on account various New Zealand breeders .....	1,165	52	1,196	57
Messrs. Hill, Clarke, & Co., on account various New South Wales breeders .....	94	.....	.....	.....
Messrs. Hill, Clarke, & Co., on account various Victorian breeders .....	239	51	.....	.....
Messrs. Hill, Clarke, & Co., on account various Tasmanian breeders.....	590	81	.....	.....
Messrs. Hill, Clarke, & Co., on account various New Zealand breeders.....	985	113	.....	.....
Messrs. Hill, Clarke, & Co., on account various South Australian breeders	25	.....	1,933	245
The New Zealand Loan and Mercantile Agency Co. (Ltd.), in conjunction with Warden Harry Graves, Esq., on account various New Zealand breeders.....	2,565	550	2,565	550
Messrs. Harrison, Jones, and Devlin, on account various New Zealand breeders.....	247	.....	247	.....
Total.....			9,078	961

APPENDIX F.

STATEMENT showing the result of Vaccinations for Anthrax as performed by Messrs. McGarvie Smith and Gunn with their own Vaccine, and by Mr. A. Devlin with Pasteur's Vaccine.

Lots Vaccinated.	Number of Sheep Vaccinated.	Were any Sheep dying when they were vaccinated.	Number of vaccinations, 1st, 2nd, and 3rd.	Number of deaths after 1st vaccination.	Number of deaths after 2nd vaccination.	Number of deaths after 3rd vaccination.	State of Weather during Vaccination.	Remarks.
<i>Vaccinated by Messrs. Smith and Gunn.</i>								
1	40,000	Yes .....	1st & 2nd	None	None	None	Hot and raining ...	Could not find a single sheep dead.
2	6,600	" .....	" ...	20	"	"	Hot .....	Believe in vaccination as a preventive.
3	7,000	" .....	" ...	70	"	"	" .....	Consider it a great success.
4	6,500	" .....	" ...	20	9	.....	From 100° to 119° in shade.	None vaccinated previously.
5	7,913	No .....	" ..	None	None	None	Cloudy and cool.....	7,913 vaccinated in 1894.
6	216	Yes .....	" ..	15	"	"	Warm .....	None vaccinated previously.
7	5,890	A few.....	" ..	5	"	"	" .....	" ..
8	2,300	" .....	" ..	None	"	"	Dry and fairly warm	" ..
9	3,411	No .....	" ..	"	"	"	" ..	500 vaccinated in 1894.
10	1,892	Few .....	" ..	1%	"	"	" ..	None vaccinated previously.
11	800	" .....	" ..	None	"	"	" ..	" ..
12	7,000	" .....	" ..	3	"	"	" ..	" ..
13	950	No .....	" ..	Nil	3	Nil	Cool.....	700 vaccinated in 1894.
14	1,260	Yes .....	" ..	"	11	"	Warm .....	None vaccinated previously.
15	3,067	" .....	" ..	"	Nil	"	Hot .....	" ..
16	8,100	No .....	" ..	"	80	"	Warm .....	5,000 vaccinated in 1894.
17	1,923	Yes .....	" ..	"	12	"	" .....	None vaccinated previously.
18	12,200	No .....	" ..	"	Nil	"	Cool.....	12,200 vaccinated in 1894.
19	2,600	Yes .....	" ..	"	"	"	Warm .....	None vaccinated previously.
Cattle 20	13,000	" .....	" ..	"	"	"	Hot .....	" ..
88 21	466	" .....	" ..	"	17	"	Warm .....	" ..
22	4,286	" .....	" ..	11	Nil	"	Hot .....	" ..
Cattle 23	8,526	" .....	" ..	Nil	"	"	" ..	3,500 vaccinated in 1894.
144 24	.....	" .....	" ..	"	"	"	" ..	None vaccinated previously.
40 25	.....	" .....	" ..	"	"	"	" ..	" ..
26	11,210	" .....	" ..	"	"	"	Fine.....	" ..
27	14,378	" .....	" ..	"	"	"	" ..	" ..
28	5,960	" .....	" ..	"	"	"	" ..	" ..
29	2,340	" .....	" ..	"	"	"	" ..	" ..
30	24,878	" .....	" ..	"	"	"	" ..	" ..
31	22,580	" .....	" ..	"	"	"	" ..	" ..
32	16,457	" .....	" ..	"	"	"	" ..	" ..
33	2,280	" .....	" ..	"	"	"	" ..	" ..
34	5,419	" .....	" ..	"	"	"	" ..	" ..
35	14,825	" .....	" ..	"	"	"	" ..	" ..
36	975	" .....	" ..	"	"	"	" ..	" ..
37	6,346	No .....	" ..	"	120	.....	Warm .....	4,800 vaccinated in 1894.
38	3,727	Yes .....	" ..	"	160	.....	" ..	" ..
39	10,790	" .....	" ..	"	850	.....	" ..	7,966 vaccinated in 1894.
40	6,767	" .....	" ..	"	126	.....	Hot .....	All vaccinated in 1894.
41	6,019	" .....	" ..	"	160	.....	" ..	None vaccinated previously.
42	1,564	No .....	" ..	"	35	.....	" ..	All vaccinated in 1894.
43	10,883	Yes .....	" ..	"	250	.....	Very hot.....	7,000 vaccinated in 1893.
44	2,000	" .....	" ..	"	100	.....	" ..	None vaccinated previously.
Cattle 45	65							
<i>Vaccinated by Mr. Devlin.</i>								
46	2,800	Nil .....	1st & 2nd	Nil	Nil	Nil	Fine.....	None vaccinated previously.
47	1,600	" .....	" ...	"	"	"	" ..	" ..
48	2,000	" .....	" ...	"	"	"	" ..	" ..
49	30,000	" .....	" ...	"	6,000	"	" ..	" ..
	346,698							

## APPENDIX G.

## FOOT-ROT.

DRESSINGS recommended by Mr. E. Stanley, Government Veterinarian. (For further details see *Agricultural Gazette*, July, 1891):—

*Arsenic Dressing.*

Arsenic, from 1 to 2 oz.  
Potash, „ 2 to 4 „  
Water, 1 gallon.

To be used in troughs for the sheep to walk through. The mixture to be boiled slowly for half-an-hour at least, till the arsenic is thoroughly dissolved.

*Sulphate of Copper (Bluestone) Dressing.*

Sulphate of copper, from  $\frac{1}{2}$  lb. to 1 lb., dissolved in a gallon of water, may be used instead of arsenic  
The following healing dressings may be used by hand after the above caustic applications:—

*Tar Dressings.*

Stockholm tar, 20 parts; carbolic acid, 1 part; or,  
Stockholm tar, 8 parts; bluestone in powder, 1 part; or,  
Oil of tar, 10 parts; carbolic acid, 1 part; olive oil, 1 part.

*Lime Dressing.*

Quick-lime, sprinkled on a dry surface, and the sheep walked through it frequently, will be found very beneficial. Before any dressings are used, the whole of the loose horn should be pared carefully from the diseased feet. It is of the greatest importance that the sheep's feet should, on the dressing being applied, be kept thoroughly clean and dry for at least three hours afterwards. They should, therefore, on leaving the troughs, or being dressed, be passed directly on to a battened or wooden floor, if it can be got, and where neither of these is obtainable, they should be passed into a dry yard, in which there is a good coating of straw, cut grass, or dry bark taken from trees which have been rung, or, in fact, any other thing which will keep their feet clean and dry.

The following are the remedies reported by the Inspectors to have been used and the results:—

Application.	Result.	Application.	Result.
Arsenic in troughs .....	Good.	Carbolic sublimate and bluestone .....	Good.
„ bluestone and carbolic acid .....	Not given.	Carbolic acid .....	Good.
„ and bluestone.....	Good.	„ and oil and butyr of antimony	Good.
„ and lime .....	Fair.	„ acid bluestone and arsenic ..	Not given.
„ and saltpetre .....	Not given.	Kerosene.....	Good.
Bluestone and corrosive sublimate .....	Satisfactory.	„ and bluestone.....	Good.
„ and arsenic .....	Good.	Lime and tar .....	Not given.
„ and kerosene .....	Good.	„ and arsenic .....	Not given.
„ and lime .....	Good.	Sulphur and bluestone .....	Good.
„ and sulphur .....	Good.	Saltpetre and arsenic.....	Not given.
„ arsenic and carbolic acid .....	Good.	Tar and turpentine .....	Not given.
Butyr of antimony .....	Good.	„ and quick-lime .....	Good.
„ „ carbolic acid and oil..	Satisfactory.	„ and bluestone.....	Good.
Corrosive sublimate .....	Not given.		

*Specifics.*

Cooper's Dip .....	Satisfactory.	Pottie's Specific .....	Not stated.
Hayward's Dip.....	In some cases.	Quibell's Foot-rot Cure .....	Good.
Little's Dip .....	Satisfactory.	Graham's Foot-rot Powder .....	Not very satisfactory.

## APPENDIX H.

*Sheath Disease in Wethers.*

Sir,

Victoria Barracks, Sydney, New South Wales, 29 October, 1894.

I have the honor to inform you that on the completion of my duties at Bourke I proceeded to the Lower Macquarie, arriving there on Sunday, 21st instant.

*Inspection.*—On Monday I inspected over 400 (four hundred) wethers that were more or less affected with disease. I also minutely examined and operated upon 20 (twenty) of the worst cases, with a view to ascertaining the nature of the complaint and the best treatment to adopt. Ten of the latter which were too far gone for treatment I directed to be killed, preserving for your inspection the ulcerated organs of generation, as also the sheaths and their contents. I photographed one sheath before and after it was operated upon, showing the immense size to which it grows as a result of the inflammatory changes.

*Inoculation.*—On Tuesday and Wednesday I operated upon another lot of affected sheep by simply squeezing as much matter as possible out of the sheath and injecting a solution of sulpho carbonate of zinc, 1 to 30 strong. I redressed the cases I operated on with injections of Jey's Fluid, 1 to 40, and carbolic

carbolic oil, 1 to 10 strong, and I inoculated six healthy wethers on the outside of the point of the sheath with some of the pus from one recently killed. On Friday, assisted by Mr. Hunter, I inspected and redressed the worst cases, and found those which I operated on (by laying the sheath open and washing it out with the fluid) were on the road to recovery. On Friday before starting for Sydney I inspected those I inoculated, but did not notice any change. I left word with Mr. Hunter to have them inspected every day, and report to me if they showed signs of developing the disease. I inoculated with a view to determining whether the disease is of a contagious nature or not.

*History of Disease.*—The history of the disease according to the information afforded by Mr. Hunter is as follows:—It was first noticed three or four years ago, and has meantime gradually become more pronounced and prevalent. It exists to a more or less extent on “Combardillo” and “Glenroy” Stations. It appears to be chiefly confined to 4-tooth wethers, rams being exempt. Several reasons are locally assigned for its origin. It is presumed by some to be due to contagion, and by others to grass seeds and flies; but in my opinion it is caused by the abnormal and gradually-increasing growth of the belly-fleece. The wool is kept continually wet in this part by the urine, consequently there is an accumulation of droppings and dirt, acting as a source of irritation to the point of the sheath, which eventually passes through the various stages of inflammation and mortification.

*Disease, 1st Stage.*—The first symptoms are slight redness and swelling at the point of the sheath, together with a little moisture on pressure. This condition may last for five or six weeks, becoming gradually worse, until it arrives at what may be called the second stage, which was the form of the disease I chiefly noticed.

*2nd Stage.*—The orifice becomes progressively smaller, the point of the sheath much congested and covered with purulent substance, the whole sheath is immensely enlarged, resembling a cow's swollen teat, although not nearly as painful or hot to the touch. When the sheath is seized by the hand and forcibly squeezed, a quantity of thick, dirty, slate-coloured, high-smelling matter is ejected from the orifice. The long hairs at the point easily break away, the wether gradually loses condition, looks anxious and restless, continually strains and tries to micturate, and indicates its painful condition by alternately lying down and getting up. On inserting a “Symes” abscess knife into the gradually-closing orifice, and laying the sheath open by a bold sweep, backwards and upwards from the point, a quantity of thick pus (too thick to escape on manual pressure from the small natural aperture) mixed with urine is freed from the interior walls. On examining the point of the worm or thread, I found it to be in some cases half eaten away, and in others, showing merely a small ulcer at the point. [*Vide specimens.*]

*3rd Stage.*—In the third or last stage the orifice was all but closed, and the abovementioned symptoms were much more intensely marked. On compressing the sheath nothing came away except highly-coloured urine, which had been evidently imprisoned; hard, dirty excrescences like soft corns appeared around the top and were easily removed. On laying open the enlarged sheath of several of the worst (some I found to be four inches long), a few tablespoonfuls of thick, inspissated, dirty, slate-coloured matter, of a cheesy consistency, slipped gradually out of its case. In a few instances the whole interior of the sheath (like the finger of a glove) came away. [*Vide specimen.*] The penis is ulcerated and gangrenous, and the sheep succumbs from its inability to micturate, combined with mortification of the part.

*Diagnosis.*—To summarise, the disease may be termed an aggravated form of “Balinitis” (or dirty sheath) which, unless duly attended to, results in retention of urine, gangrene of the penis, and death.

*Curative Treatment.*—I found the simplest and most expedient manner of treatment to be as follows:—The sheep should be held by an assistant in a sitting posture, on the top of a P. and R. fence, with the belly facing the operator. The operator seizes the sheath with the left hand, inserts a “Symes” abscess knife into the point, makes an incision downwards and lays the sheath completely open. Syringe the sheath well with Jey's Fluid, diluted 1 to 40, from a bucket suspended at hand, and when clean inject about a spoonful of carbolic oil, 1 to 10. The wound should be redressed in 48 hours, and inspected a few days later.

*Preventive Treatment.*—Sheep with long belly-fleeces should be dipped after shearing. That portion of the belly-fleece which grows over the sheath should be clipped a few months before shearing and washed with Jey's Fluid.

I have, &c.,

WILLIAM SCOTT, M.R.C.V.S., Lond.

To the Acting Chief Inspector of Stock,  
Stock Department, New South Wales.



## APPENDIX K.

STATEMENT OF RECEIPTS AND EXPENDITURE in connection with the Trust Fund Account  
 "Prevention of Scab in Sheep" from the 1st January to 31st December, 1895.

DR.	<i>"As per Treasury Account."</i>		CR.
1895. January 1 to December 31— To Amount of Assessment, &c., received	£	s. d.	1895. January 1— By Balance .....
	21,676	17 0	By Amount of Accounts paid from Pre- vention of Scab in Sheep Account ...
			By Amount to Credit of Fund, 1st Janu- ary, 1896.....
	£	21,676 17 0	£
			21,676 17 0

## DETAILED STATEMENT OF AMOUNTS VOTED AND EXPENDED for 1895.

*"As per Mines Department Account."*

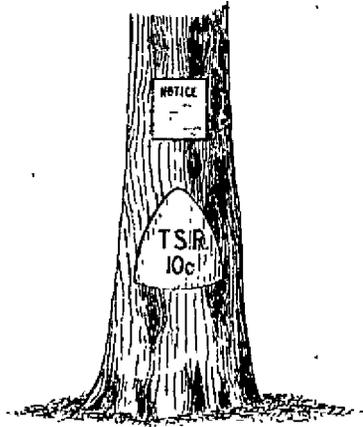
AMOUNTS VOTED.		AMOUNTS EXPENDED.	
Salaries—	£	s. d.	£
			s. d.
1 Chief Inspector, at.....	£605	0 0	
10 Inspectors, at .....	344	0 0	
6 " " .....	299	0 0	
1 " " .....	263	0 0	
3 " " .....	260	0 0	
26 " " .....	254	0 0	
5 " " .....	245	0 0	
2 " " .....	160	0 0	
1 " " .....	25	0 0	
1 Quarantine Keeper, at ...	110	0 0	
1 Messenger, at.....	120	0 0	
1 Clerk, at .....	281	0 0	
1 " " .....	259	0 0	
1 " " .....	200	0 0	
1 " " .....	160	0 0	
2 " " .....	150	0 0	
1 Draftsman, at.....	236	0 0	
	£	16,722 0 0	
Travelling Expenses of Inspectors.....	2,500	0 0	
" " Sheep Directors .....	300	0 0	
Allowances to Inspectors for Stationery .....	225	0 0	
Medicaments for Dressing Sheep .....	10	0 0	
Rent of Offices .....	500	0 0	
Incidental Expenses.....	1,000	0 0	
Gratuity to E. A. Bailey, late clerk, whose services were dispensed with .....	123	0 0	
	£	21,380 0 0	
			£
			21,380 0 0
			s. d.
			3 11
			2,244 17 6
			450 15 0
			233 4 1
			607 9 3
			1,843 8 10
			123 0 0
			214 1 5

N.B.—From the above Statements it will be seen that the Treasury and Mines Department Accounts do not agree, for the reason that the contingent vote covers claims irrespective of date, and the account kept at the Treasury is balanced on 31st December in each year while it is not so at this Department.

[Diagram.]

APPENDIX.L

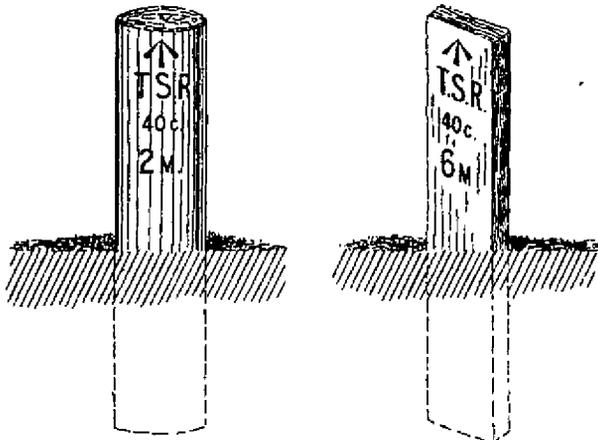
MARKING OF TRAVELLING STOCK RESERVES



*Re-marking of existing Travelling Stock Reserves.*

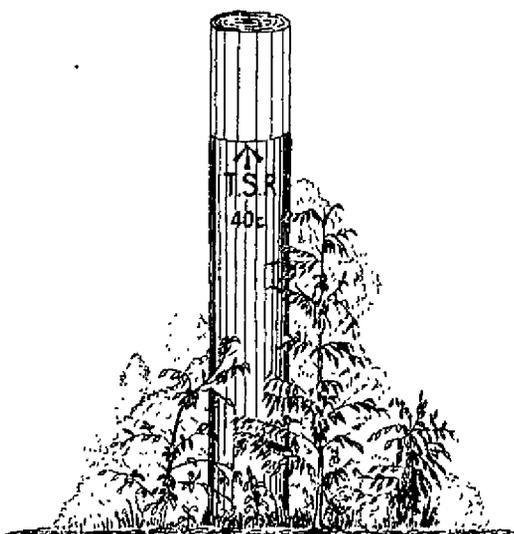
*Tree in conspicuous position as a guide post with printed notice*

*Position not determined relatively to traverse)*



*On Plains.*

*Reference posts to be erected and marked.*



*On Plains covered with low scrub.*

1896.

—  
LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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# REPORT

OF THE

## INTERCOLONIAL STOCK CONFERENCE,

HELD IN

SYDNEY, AUGUST, 1896.

---

*Printed under No. 24 Report from Printing Committee, 29 October, 1896.*

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SYDNEY: CHARLES POTTER, GOVERNMENT PRINTER, PHILLIP STREET.

—  
1896.



# REPORT

OF THE

## INTERCOLONIAL STOCK CONFERENCE,

HELD IN SYDNEY, AUGUST, 1896.

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IN pursuance of the agreement arrived at by the Governments of New South Wales, Victoria, South Australia, and Queensland, the representatives appointed held meetings in the Executive Council Chambers, Sydney, on the 12th, 13th, 14th, and 15th August, 1896.

The Colonies of Tasmania and New Zealand, although not Ministerially represented, sent Departmental officers to confer with those of the other Colonies. It was determined that a statement prepared by the Stock Department of New South Wales containing a series of questions should be placed before the officers of the various Colonies in attendance, who were asked to meet in separate conference and report to the Ministerial representatives.

The officers met accordingly, and submitted their replies as under:—

1. Q.—In what Colonies does the disease exist?

A.—Queensland, the northern territory of South Australia, and it has been reported in Western Australia.

2. Q.—What is Tick Fever?

A.—It is not only the opinion of Mr. Pound, the Director of the Stock Institute, Brisbane, and Dr. Hunt, of Hughenden, after careful investigation and test, but also that of Dr. Salmon, the Chief of the Bureau of Animal Industry at Washington, in the United States, to whom full particulars of the Queensland tick and its life-history and effect were forwarded, that the "Tick Fever" of Queensland is identical with "Texas Fever" of America.

As this is the case, and as a thorough and exhaustive investigation was, during the years 1889, 1890, 1891, and 1892, carried out by the ablest scientists in the United States, under Dr. Salmon's direction, as to the nature, causation, and prevention of Texas Fever, no better description of the disease now prevalent in Queensland can be given than that contained in the report giving the result of these investigations, and published by the United States Department of Agriculture, Bureau of Animal Industry, Bulletin No. 1, of 1892. It is to the following effect:—

#### *Conclusions.*

(1.) Texas Fever is a disease of the blood, characterised by destruction of the red blood corpuscles. The symptoms are partly due to the anæmia produced, partly to the large amount of debris in the blood, which is excreted with difficulty, and which causes derangement of the organs occupied with its removal.

(2.) The destruction of the red corpuscles is due to the micro-organism or micro-parasite which lives within them. It belongs to the Protozoa, and passes several distinct phases in the blood.

3. Q.—Is Tick Fever a Bovine Disease only?

A.—Yes; so far as experimental evidence goes.

4. Q.—Is the Disease indigenous, or was it introduced?

A.—We have not sufficient information at our disposal to enable us to form an opinion.

5. Q.—When attention was first drawn to the Disease?

A.—Attention was first drawn to the disease about eighteen years ago, on the road between Queensland and Northern Territory, near the Roper River.

6. What is the history of the Introduction and Spread of Tick Fever in Australia?

The first intimation of Tick Fever being in Queensland was received in 1891. The disease was carried there by cattle from the northern territory of South Australia, but its introduction was not then regarded in a serious light by cattle owners. In the latter end of 1894, however, through the introduction of other infected cattle, and the spread of the disease from those first introduced, owners became alarmed, and, official communication of the fact being then made for the first time to the Queensland Government, Mr. Pound was sent to investigate and report. He found that the disease at first spread slowly in Northern Queensland, but that latterly it did so in a comparatively rapid manner.

The bullock teams and drift of stock from the Northern Territory and the western portion of Northern Queensland to the boiling and extract works on the Albert and Norman Rivers had carried the infection both in a southerly and easterly direction to a good many herds in that part of Queensland, inflicting very serious loss; but, as a rule, the losses were not so heavy in the country at some distance back as on the coast.

Before long the infection was carried to the east coast, and there the losses have frequently been very heavy, nor are they as yet, it would seem, over, while it is doubtful if the disease is not still spreading, and the whole of the coast country, from Rockhampton to Thursday Island, cannot be otherwise termed than more or less infected or suspected.

The infection was also carried from the gulf country in another direction by infected cattle travelling from the country on the Flinders, by Kynana and Winton, to Longreach, whence after some delay they were sent on to Barcaldine and trucked to Rockhampton for Lakes Creek; and, although no deaths are reported among the cattle infected by those from the Flinders, ticks have been found on some of them, and the question whether or not the disease will spread from this centre of infection will not be settled until it is seen whether the warm weather of spring and summer does not call the ticks into activity.

7. What is the extent of the Disease in Queensland?

The extreme north and south points known to have been infected with tick fever in Queensland are Thursday Island in the north, and Longreach in the south, and the extreme east and west points may be said to be Townsville on the east, and the Nicholson River on the South Australian border on the west. That is to say, the disease has spread from the Gulf of Carpentaria as far south as the Tropic of Capricorn and as far north as Thursday Island, but only to certain localities in that portion of the Colony. If the whole of that portion were infected, that would mean that about one-half of the Colony was so; but while tracts of country along the south and part of the east sides of the gulf, and on the eastern seaboard of the Colony are infected, and areas between the infected country on the gulf and that on the eastern seaboard, suspected of being infected, it is believed that at least one-half of that portion of the Colony north of the Tropic of Capricorn is still free from the infection.

8. What is the period of incubation of the Disease?

The period of incubation has been ascertained by sub-cutaneous injection into healthy cattle of the blood of cattle suffering from the disease. When the blood has been injected the fever temperature appears within a few days, and outward signs of illness are manifested on, or even before, the sixth day, and the external symptoms appear from six to ten days.

## 9. What are the most noticeable Symptoms ?

### (1.) *Acute Type.*

This type is the disease of the hot summer months, and appears suddenly and among all the animals exposed to the infection, and of course can be observed sooner by taking the temperature with a thermometer than any way else, the temperature in the case of disease ranging from 105 to 108 Fahr. When very high it can be detected by touching the skin. Next to the temperature the colour (red or yellow) of the urine is noticeable. Constipation is another symptom, and loss of appetite and cessation of rumen usually take place from three to five days; and, in the case of milch cows, cessation of the flow of milk followed by loss of sight, swaying of hind-quarters, and trembling of the muscles, especially of hind-quarters, and thinness of the blood follow.

This type of the disease usually runs its course in a few days, the animals dying or surviving according to the virulence or otherwise of the disease. A good many of those that do survive do not regain their original vigour, while the others do so in a few weeks.

### (2.) *Mild non-fatal or Chronic Type.*

This type of Texas fever which, in America, is only to be met with in the autumn, is hard to distinguish from other ailments, as the only outward symptoms are slight loss of appetite and dullness, while the temperature very seldom rises above 105 in the evening, and the destruction of the blood corpuscles goes on slowly. It will be noticed that the season of the year and temperature has a good deal to do with the type of the disease, the mild form being in the cooler season of the year.

### (3.) *The effect of the Disease on Calves and the result.*

During the discussions which have taken place with respect to this disease, statements have over and over again been made that cattle in the Gulf country, although covered with ticks, do not now die, while it is reported on equally reliable reports that ruinous losses have sooner or later followed the first infection of herds in other portions of that part of Queensland, and more especially on the coast country on the eastern side of the Colony. This, to those who are unacquainted with the explanation, must appear very contradictory; and the explanation is simple and lies in the fact that calves and young cattle, although attacked by the disease when infested with ticks, very seldom die; and as they are not, as a rule, subject to another attack, or at any rate to another attack which proves fatal, they grow up immune, and although perhaps inconvenienced by the ticks they seldom or never exhibit any serious symptoms of fever. While, however, this is a fortunate matter for the owners of cattle already infested, it in no way removes the obligation on those charged with the protection of our flocks and herds to do everything possible to stay the spread of the disease, especially as it is questionable with our Australian climate whether, when land is once infested, it can ever after be eradicated.

## 10. What are the most noticeable *Post-mortem* appearances ?

### (1.) *The Spleen.*

One of the most noticeable *post-mortem* appearances in Texas Fever is the enlargement of the spleen to two or even four times its natural weight, through engorgement with red blood corpuscles or their remains in the form of irregular lumps of yellowish pigment. This destroys the structure of the spleen, and of course completely arrests its functions.

### (2.) *The Liver.*

Though not so noticeable as that of the spleen, the destruction of the liver is perhaps a more important matter, through its enlargement, congestion, bile ingestion, and fatty degeneration. The increase of weight ranges from 3 lb. to 5 lb. heavier than a healthy liver, and when deceased the liver is paler than a healthy one and has a peculiar mottled appearance.

### (3.) *The Bile.*

That found in the gall bladder (of which there is usually a considerable quantity—one half-pint to a quart) has exchanged its limpid fluid appearance for an almost semi-solid mass.

### (4.)

(4.) *The Kidneys.*

In a good many cases the kidneys are in a sero-sanguinolent condition of the connective tissue and the fat about the kidneys; and in acute cases they are enlarged and of a brown colour.

## 11. What is the Cattle Tick, and what is its Life History?

Among the conclusions come to, as the result of the investigations instituted by the Department of Agriculture in the United States, with respect to Texas Fever, No. 5, is to the effect that the disease in nature is transmitted from cattle which come from the permanently infected territory to cattle outside this territory by the Cattle Tick (*Ixodes boris*), of which the following is a brief description, taken principally from Mr. Director Pound's report:—

(1.) *The Ticks on Cattle.*

The mature female tick, as seen on the animal's skin, has an oblong oval-shaped body resembling the seed of the castor-oil plant, and is of a dull leaden colour due to the blood red contents of the body showing through the distended semi-transparent cuticle. It rarely exceeds twelve millimetres ( $\frac{1}{2}$ -in.) in length, and seven millimetres (a little less than  $\frac{3}{16}$ th inch) in breadth, and possesses four pairs of legs situated on the anterior lateral portion of the body. It attaches itself to its host by means of peculiarly constructed mouth organs collectively known as the rostrum, in the centre of which is a barbed dart furnished on either side with several rows of teeth set obliquely, which enables the creature to adhere to the skin more firmly.

The male tick is usually found attached to the skin of its host immediately underneath the anterior part of the female. Its body is of a dark brown colour and somewhat triangular in shape, and when full grown is only about one-fiftieth part of the size of the fully developed female, and never being in an engorged state, is very much more active and also stronger than the female.

(2.) *The Ticks when they leave Cattle.*

As the female tick engorges herself with blood she becomes fecundated by the male, and having arrived at maturity, releases her hold from the skin by withdrawing the barbed mouth organs, and falls to the ground; on recovering herself she walks away to some secluded spot where she remains quiescent for about eight or ten days, during which time the contents of the abdomen are undergoing important changes prior to oviposition (the process of egg-laying), the period of which generally takes from seven to fourteen days. As a rule the fully matured ticks lay from 1,600 to 2,000 eggs, which are agglomerated in a dense mass. As oviposition proceeds she gradually gets smaller or shrivels up and ultimately dies beside what will be subsequently her own progeny. What becomes of the male tick is not known. He may go in search of another female, but he most likely dies.

(3.) *The Incubation of the Tick.*

The period of incubation in a temperature ranging between 90 and 110 Fahr. was from fourteen to twenty-six days, but when the temperature is lower the incubation period is longer—as long as three or four weeks, or even longer.

When the young tick emerges from the shell it has only six legs, and is of a light brown colour, but gradually assumes a much darker shade. In this stage the young ticks are extremely active. They are very tenacious of life, surviving in a very low temperature, and living in well stoppered bottles seventeen weeks without food or water, or even fresh air.

No further development takes place in these ticks until they gain access and adhere to some animal and get nourishment from the blood, when in the course of seven or eight days they have their first moult, growing, and changing their colour, which becomes darker, and now having four instead of three pairs of legs. Then in seven days more the second moult takes place, and the tick is sexually mature. From this time till about the twenty-first to the twenty-second day, the female increases in size till she is fifty times the size of the male. She is then fully engorged and fecundated, and drops off to lay her eggs as already explained.

(4.)

(4.) *Where the Young Ticks settle on Cattle.*

In some instances the cattle ticks are present in extraordinary numbers; at times fairly equally distributed over the whole of the animal's body, and at other times crowded on particular portions of it. As many as 40,000 were found on one animal, and then the whole were not counted. The ticks as a rule prefer the thin soft portions of the skin, for instance, along the belly, on and around the udder or scrotum, on either side of the neck, in and outside the thighs, and on the twist.

(5.) *The effect of the Ticks on the Cattle.*

Dr. Salmon says that it has been demonstrated that ticks carry the infection of Texas Fever, the micro-organism; they introduce it into the tissue of susceptible cattle, and produce the disease. There is thus a complicated infection in which two very different kinds of parasites play an important part. He further says, another discovery not less marvellous has been made—that the micro-organism, which constitutes the contagion, is transmitted through the egg to the young tick, and it is this, and not the adult tick carried by the Southern (the infested) cattle, which finds its way upon susceptible animals and causes the disease: That is to say,—if cattle infested with ticks are brought into contact with sound cattle, it is not these ticks, but their progeny, which infest the sound cattle, and transmit the micro-organism which sets up the fever. On the micro-organism being introduced into the tissues of susceptible cattle it takes possession of and multiplies in the blood corpuscles and disintegrates and destroys them. This, of course, in the mild type of the disease, leads to poverty in the blood, and the cattle become poor and weak. In the acute type again fever follows, which frequently results in death. All this is fully confirmed by Mr. Pound and Dr. Hunt's investigations in Queensland.

12. What steps have been taken by Queensland to arrest the Disease, and with what Result?

(1.) *Quarantining Infected Stock.*

In October, 1894, the whole of the Gulf country and Cape Peninsula west of the 144th meridian was placed in quarantine, but it was soon found that the ticks had already spread beyond the limit notified towards the eastern sea-board. On this being found to be the case, a fresh quarantine was in November, 1895, notified across the Colony from east to west, following generally the 21st parallel; but although this has to a certain extent stayed the spread of the disease, it has not proved thoroughly effective.

(2.) *Fresh Legislation.*

The defects of the law were from the first fully recognised. Additional inspectors were appointed, and a very effective and comprehensive measure has been carried through Parliament for dealing with this and other diseases in stock. Under this, with a full staff of inspectors, the true state of the stock in the different localities will be ascertained, the infected runs and holdings will be placed in quarantine, and the provisions regulating the dipping and movement of stock will be strictly enforced. Besides this, the Government is constructing dips on the principal stock routes, and in connection with their northern and central railway system. A large number of local authorities have also with the assistance of the Government erected dips within their areas, and undertaken to manage them.

(3.) *Dipping for the Destruction of the Tick.*

On information being received some eight or ten months back from America that dipping with oil had proved successful in destroying the tick on cattle, dips were constructed in several parts of Queensland, and a considerable number of cattle were dipped.

There is good reason for believing that, where a sufficient quantity of the right sort of oil is put into the dip, and the process properly carried out, the ticks on the stock will all be destroyed. But while this is the case, the experience so far as yet gained does not go to show that the oil dip will act as a preventive for any length of time, as well as destroy the tick, for young ticks have been found on cattle which were dipped only a fortnight before, and had been carefully examined a day or two after the dipping, and found entirely free from living ticks. This is the weak point in the dipping process, and every endeavour should be made to discover  
some

some ingredient to use with the oil or other effective medicament which will adhere for some considerable time to the hair, and be so distasteful to the tick as to keep it from coming on the cattle until the effect of the ingredient in this respect has ceased. It is this property in sulphur that makes dips in which sulphur is used so effective in the cure of scab, for the smell of the sulphur in warm weather can be perceived three months after the dipping. Notwithstanding this weak point in the oil dip, the defect only applies in the case of cattle which have to be put back again on tick-infested runs. In that of cattle, from suspected or doubtful country which their owners desire to travel into clean, it is believed that if they are carefully examined and show no signs of infection and are effectively dipped, they might be allowed to enter, and Queensland cattle about to enter New South Wales might, in order to remove all doubt, be treated in this way. Even as regards cattle on infected runs, it is believed that the process will frequently be turned to good account by watching the seasons and giving repeated dippings when they will have the greatest effect. This will be especially the case as regards dairy cattle and store bullocks put on to fatten.

The Colony is now divided into three zones.

- (1.) That north of a line generally following the 21st parallel, south of which no cattle or horses can pass under any conditions.
- (2.) The central zone lying between the 21st and 24th parallels.
- (3.) The portion lying between the 24th parallel and the boundary with New South Wales.

(1.) *The Northern Zone.*

In respect of cattle or horses in this zone—

- (1.) None shall pass south of the southern boundary.
- (2.) No stock in the infected portions shall leave such portions unless for immediate slaughter, and then only within that zone.
- (3.) If it is intended that cattle or horses from any portion of the zone are to be travelled through any other portion not declared infected, they must be properly dipped immediately before entering on the uninfected country.
- (4.) When any of such stock are to be carried by train the trucks will be thoroughly disinfected.
- (5.) At the point of slaughter such stock will not be permitted to be in contact with other cattle.

(2.) *The Central Zone.*

- (1.) This zone has been patrolled by reliable officers specially selected for the purpose, and the infested centres delimited and mapped out.
- (2.) The eastern centre of infection at North Rockhampton has been proclaimed an absolute quarantine.
- (3.) The western centre of infection, as shown on the map, is declared an infected area.
- (4.) No cattle or horses can leave the infected areas except for immediate slaughter within the zone, and under the same precautionary conditions as are observed in the northern zone.
- (5.) No such stock to be admitted south from the clean portions of this zone until after having been dipped at a point on the line of Central Railway, about 30 miles north of the southern boundary of the zone.

(3.) *The Southern Zone.*

In this zone the Board of Stock Commissioners have already dealt with the subject of controlling cattle traffic, by—

- (1.) Determining the points along the northern line of rabbit fence at which only stock from south of the 24th parallel can pass.
- (2.) By enforcing inspection of such stock at those points.
- (3.) By defining stock routes from those points, both on the map and by letter-press descriptions, by which only cattle may travel to the Border.

13. What steps have been taken by the other Colonies ?

1. NEW SOUTH WALES.

(1.) *Proclamation and Crossings.*

4th February, 1896.—A proclamation was issued under the “ Customs Regulation Act, 1879,” prohibiting the introduction of horses and cattle from that part of Queensland north of the Central Railway Line, and only allowing the introduction of them from south of that line on inspection at the crossing-places at—

Ballandeen (Wallangarra),  
Mungindi,  
Brenda,  
Barringun,  
Hungerford,  
Wompah.

Additional crossing-places have since been notified at Tullabudgera, Mount Lindsay, Acacia Creek, White Swamp, Boggabilla, Hebel, Parragundy, Adelaide Gate.

(2.) *Inspectors and Inspections.*

*Inspectors.*—The Inspectors of Stock at Glen Innes, Warialda, Walgett, Brewarrina, Bourke, and Wanaaring were appointed Customs Officers for the purpose of enforcing the prohibition; and the following gentlemen have been appointed Acting Inspectors and Customs Officers to assist the Staff Inspectors:—

C. D. Whitty, Tullabudgera.  
P. B. Chauvel, Mt. Lindsay.  
J. E. Smith, Wallangara.  
Jas. Skinner, Boggabilla.  
James McNall, Barringun.  
John Ducat, Wompah.  
J. A. Robertson, Hebel.  
L. Gillespie, Acacia Creek.  
J. R. McGovern, Brenda.  
S. R. Scott, Mungindi.  
Peter Jeffrey, Mingoola Station.

Mr. Jeffrey only inspects stock leaving Maidenhead and Bonshaw Stations, which stations have country adjoining in Queensland, and they are worked as one under Bond.

Thus there are seventeen inspectors now employed on the Border in seeing that the regulation is enforced, and, in addition, the Collector of Customs and the Inspector-General of Police have instructed their officers on the Queensland Border to assist.

*Action before Crossing.*—Before any cattle or horses are allowed to cross they must give seven days' notice to the inspector at the crossing-place, and produce a declaration by the owner, and a certificate by an inspector in Queensland, that such cattle are not infected.

(3.) *Fresh Legislation.*

On the passing of the Imported Stock Act Further Amendment Act of 1896 proclamations were issued declaring “ Tick Fever or Texas Fever ” in cattle, horses, or camels to be an infectious or contagious disease for the purpose of that Act, and Queensland was declared to be an infected colony.

(4.) *Erection of Yards for closer inspection.*

It is proposed to erect yards at the principal crossing-places for the closer inspection of stock, and to place them in a crush for that purpose when necessary.

In the meantime the Queensland Government has granted the use of the pound-yards on their side of the Border for this purpose.

(5.) *Regulations, &c., Hides.*

On 4th July regulations were published prohibiting the introduction of hides or skins of cattle, horses, or camels, unless they had been thoroughly salted in a proper pit for one week, and that they were accompanied by a certificate from an inspector that the requirements of the regulation had been complied with.

If accompanied by this certificate the Customs Officers allow the hides to be landed, subject to inspection at the stores to which they may be sent.

## 2. VICTORIA.

Introduction into Victoria of unsalted hides of cattle prohibited.

Regulation 30th June last, admitting hides from Queensland if accompanied by a certificate from an Inspector of Stock at the port of shipment that the hides have been thoroughly and effectively salted.

Queensland cattle, horses, sheep, and dogs by sea prohibited from 14th July proximo.

## 3. TASMANIA.

Proclamation, 6th July, 1896, absolutely prohibiting for 12 months the importation of any horses, cattle, and hides from Queensland.

## 4. NEW ZEALAND.

Order in Council, 20th April, 1896, prohibiting the importation of cattle, sheep, fresh meat (with the exception of frozen meat), bones, horns, hoofs, hairs, skins, offal, or other part of such animals into New Zealand.

## 5. SOUTH AUSTRALIA.

1. Proclamation 17th June, 1896, prohibiting for 12 months the introduction into that part of South Australia south of the 26th parallel of latitude, cattle or horses from Queensland, unless they have been examined by an inspector.

2. Prohibiting for the same time the removal of cattle or horses (except working horses which have been dressed) from that portion of the Northern Territory north of a line commencing at a line at the 450th mile post on the eastern boundary, between the Northern Territory and Queensland, and thence to the western boundary between the Northern Territory and Western Australia to the point where the southern boundaries of leases 1,809 and 1,811 meet the boundary of Western Australia.

3. Prohibiting for twelve months the introduction into any part of South Australia, south of the 26th parallel of latitude, cattle or horses from that portion of the Northern Territory north of the said parallel, and south of the aforesaid line mentioned in No. 2, unless under a permit from an inspector.

4. Prohibiting for a period of twelve months the introduction into any part of South Australia south of the 26th parallel of south latitude, of cattle, horses, or hides, from Queensland or any part of the Northern Territory, unless such hides have been previously salted or dressed.

## 14. What is the effect of dipping?

Dipping is being carried out in Northern and Central Queensland at the present time of the year, when it is favourable for the cattle and unfavourable for the tick. This should be continued with increased activity during the summer months. It is noticed that cattle after being dipped appear much quieter and healthier than those undipped. The undipped cattle stand for hours in the lagoons, care very little for food, and become emaciated. As to the oil being efficacious in killing the tick, that is proved beyond all doubt.

## 15. What is the best kind of oil or other medicaments?

Apollo oil and cotton-seed oil have been found most efficacious in Queensland up to the present time, yet the question requires further research.

## 16. What is the best form of dip?

The form of dip proposed is about 4 feet wide at the top and 2 ft. 6 in. at the bottom and about 30 feet long and 7 feet deep. Some of the dips are made with perfectly vertical ends with a tip-board as before described, but the sloping entrance is preferred.

Q—When should dipping be used by owners?

(1.) A.—When the first symptoms of the disease are observed in a herd, whatever the size of the run may be, the infected and suspected portion of the herd should be dipped, as in that way the disease may be stopped.

(2.) When the disease appears in a paddock in which cattle are being fattened, they might be dipped; and, if the disease again appear, dipped again; and in this way they would likely be protected till they are fit for market, although the dippings might throw them back somewhat in condition.

(3.)

- (3.) Even when the disease had obtained a strong footing in a large herd, if the cattle are running in paddocks and can be mustered, it would be advantageous to dip.
- (4.) In the case of dairy and other small herds it will always be advantageous to dip.

Q.—Should dipping for tick be made compulsory?

A.—Yes, in such cases as the following :—

- (1.) In the case of cattle in a quarantine area, travelling from an infested run, through suspected, but not declared infected, country to market, the dipping to be on the owner's own run (unless a public dip is near).
- (2.) In the case of cattle travelling from doubtful country into clean country.
- (3.) In the case of cattle which have travelled through infected country.
- (4.) In the case of cattle which have come into direct or indirect contact with infected or suspected stock.

17. What result has followed Inoculation?

No satisfactory experiments in inoculation have been made, and the information concerning the disease is that an animal enjoys no certain immunity from a previous attack.

18. Should hides be pit or dry salted?

The opinion is that dry-salting is preferable to brine or pit salting.

Dry-salting of hides should be accompanied by a certificate from a competent officer that they have been thoroughly and effectively salted for a period of not less than seven days, and a declaration to the same effect from the owner.

19. Are there any instances in which the Tick infests the cattle without being followed by symptoms of Red-water or the disease known as Tick Fever?

Symptoms are always shown in the early or first attack of the tick, namely, fever and red-water. But in chronic cases of tick infection the acute symptoms may not be noticeable, although the micro-organism is always present in the blood.

20. What is the length of time the Tick will live without finding a host?

The maximum time known to elapse between the dropping to the ground of a female tick and the subsequent attachment of the progeny to a fresh animal, according to Mr. Pound's Australian experience, is one year at least, and the minimum time one month.

21. How long will the Tick live on the untreated hide?

From a series of carefully-conducted experiments by Mr. Pound, it has been proved that the tick will live on untreated hides from five to twenty days.

22. How is the risk of Infection communicated?

Queensland observations show that ticks may be spread by any moving or movable object, including domestic and wild animals and birds, these acting as intermediary agents for the conveyance of the larval tick. The extent of the consequent risk cannot be reliably stated at present, but it is probable that it is not very great.

#### CONCLUSIONS.

The Conference after full consideration of these questions and replies resolves :—That the disease is identical with what is known as the Texas fever in America, and is caused by ticks. And that although the authorities there have given very careful consideration by means of exhaustive experiments and otherwise, no satisfactory method of eradication or remedy has yet been discovered. The want of definite knowledge points to the necessity for the various Governments jointly undertaking the expense of continuing experiments in the Colony of Queensland as to the nature of the disease, and the most effectual measures to be taken to combat it. The Conference considers that the duty of making these experiments should

should be entrusted to Dr. Cobb, of New South Wales, Dr. Cherry, of Victoria, Dr. Whittell, of South Australia, and Mr. Pound, of Queensland, and agree to recommend this course for the adoption of their respective Governments.

The Conference is of opinion that until the investigations above referred to are completed by the experts, it is desirable that measures should be taken to arrest, as far as possible, the spread of the disease. It is acknowledged that the Colony of Queensland has already, since the discovery by them of the baneful effects of this plague, done their utmost (both by legislative and administrative action) to prevent the spread of the disease, and to discover a remedy for it; but the Conference feel it is incumbent upon all the Colonies to take further precautions to prevent the evil spreading beyond its present limits. With a view to giving effect to this the representatives of New South Wales, Victoria, and South Australia expressed their wish that, in the interests of Australia generally, the Colony of Queensland would see its way to extend the prohibitory line to (as shown on the map) a point well in advance of any known ticks, and, after full consideration, the representative of Queensland agreed to recommend his Government to also absolutely prohibit the movements of cattle from the central or suspected zone southwards, pending further information and results, and until the experience gained of the progress of this disease during the spring and summer months of this and next year should be gained.

As there is a possibility of the disease being carried to other Colonies by hides, a question has arisen as to whether dry-salting or immersing in brine is the more effectual way of destroying the ticks upon them; the Conference arrived at the conclusion that dry-salting, if properly performed, is absolutely safe. They, therefore, concur in recommending that hides dry-salted should be allowed to be imported into the various Colonies if accompanied by a certificate from an inspector in Queensland to the effect that dry-salting has been properly performed as recommended by the official experts.

The Conference agree to recommend to their Governments that a reward of £5,000 be offered to any person who shall first discover and make known a satisfactory preventive or remedy for the disease known as tick fever.

The Conference desire to place on record its appreciation of the prompt action of the Government of Queensland in sending a Commission of Experts to America to investigate the Tick Fever and its relation to Texas Fever, and to ascertain whether it was practicable to apply the remedies adopted there to the varying conditions of Australia, and desire to make public an advanced report received by the Queensland Government from Dr. Hunt, the Queensland special delegate at Washington, to the effect that the diseases—Texas Fever and Australian Tick Fever—are identical, but that the Bureau of Animal Industry, at Washington, are doubtful about the benefits of dipping or inoculation, and that the loss of cattle born in infected areas is trivial.

The Conference acknowledge the valuable assistance rendered them by Professor Wallace, of the University of Edinburgh, a passing visitor to Australia, who generously placed his experience and scientific abilities at the service of the Conference.

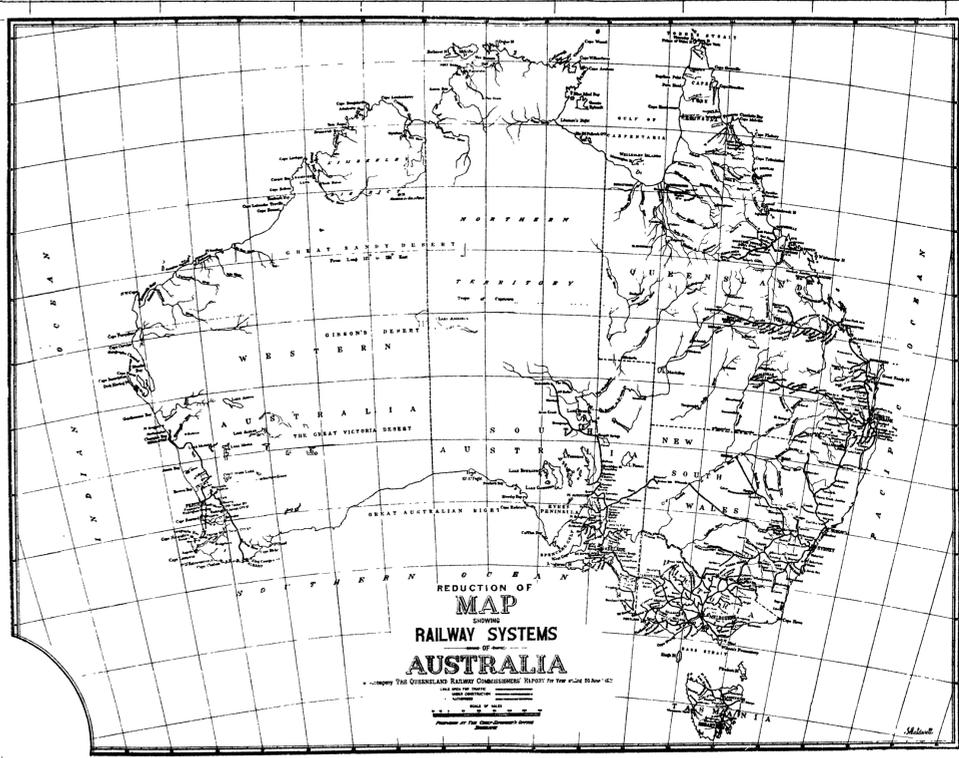
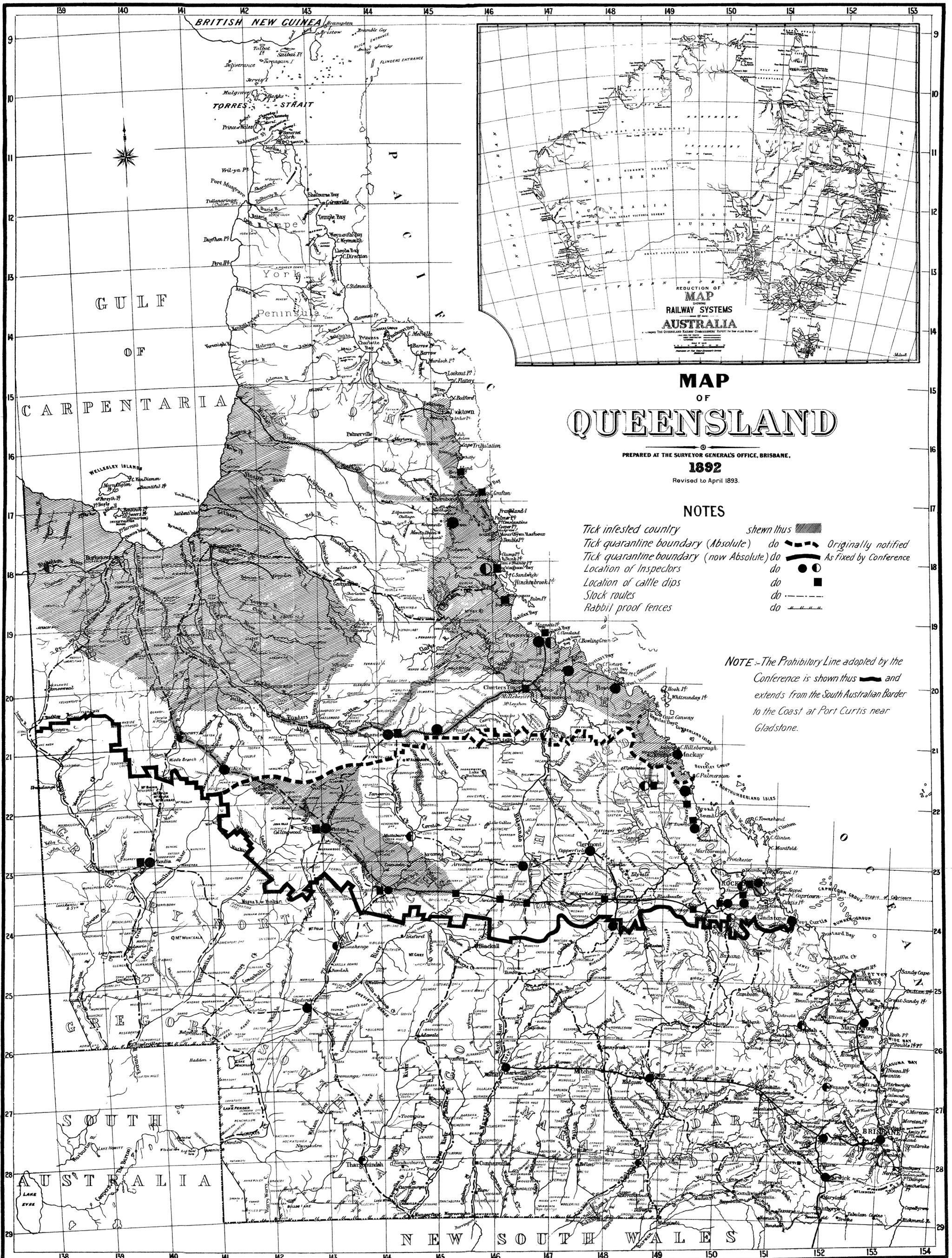
In the absence of any representative from West Australia, no definite information could be obtained as to whether the disease is spreading in that Colony. It is recommended that the Government of West Australia be asked to say to what extent the disease exists, and what steps are being taken to deal with it.

The members of the Conference availed themselves of the opportunity to discuss the advisableness of adopting an improved system of branding of stock, with the object of preventing the loss in the value of the hides, amounting, it is stated, to £300,000 per annum, now sustained by owners, and decided to recommend to the Governments of the Colonies represented, that measures for this object should be introduced into the several Legislatures at the earliest possible date.

The members of the Conference desire to place on record their appreciation of the manner in which the Hon. Sydney Smith presided over the Conference, and to express their thanks for the courtesy extended to them.

SYDNEY SMITH.  
JOHN W. TAVERNER.  
JOHN A. COCKBURN.  
HORACE TOZER.

[2 plans.]



# MAP OF QUEENSLAND

PREPARED AT THE SURVEYOR GENERAL'S OFFICE, BRISBANE,  
**1892**  
 Revised to April 1893.

## NOTES

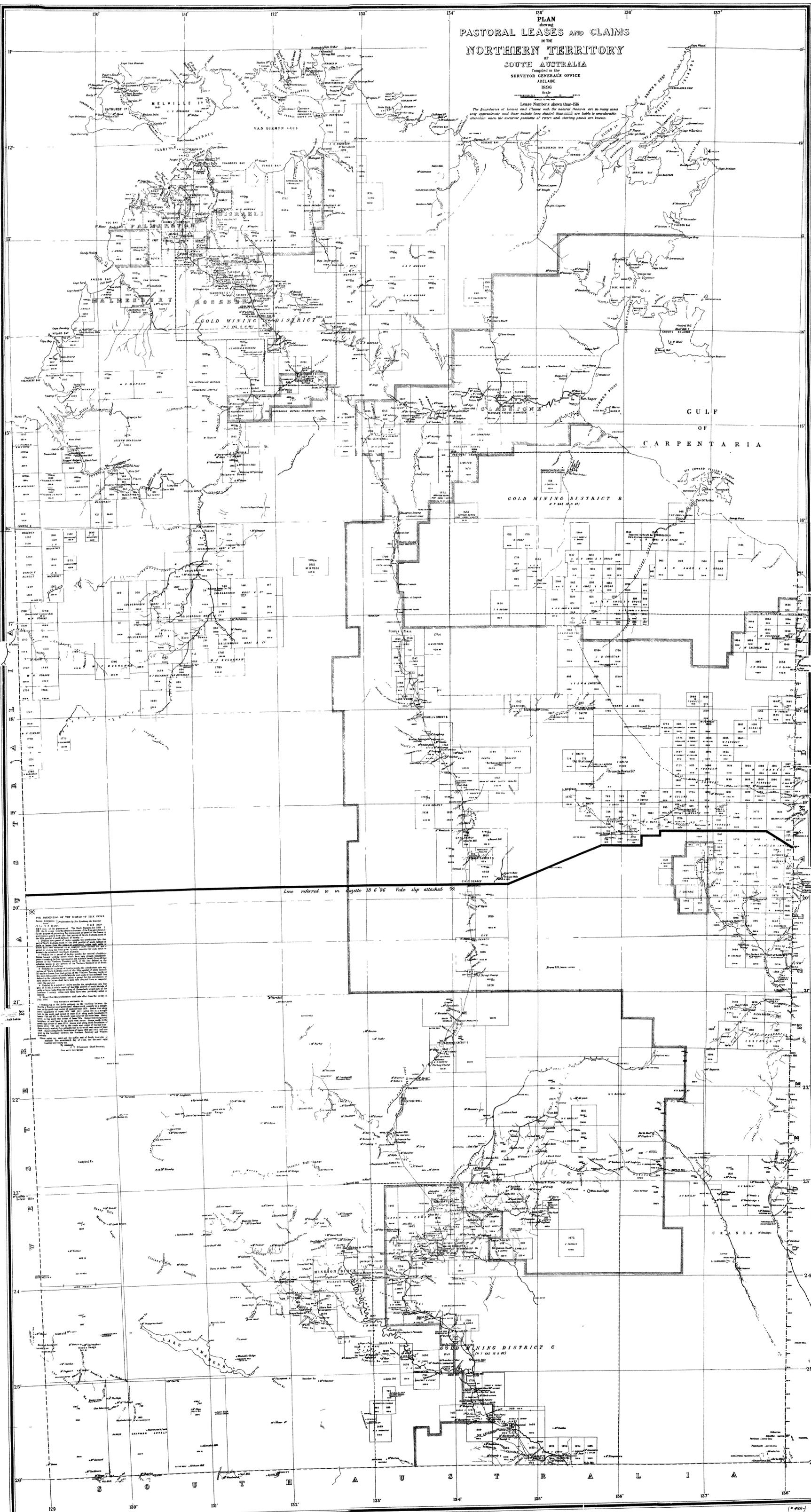
- Tick infested country *shewn thus*
- Tick quarantine boundary (Absolute) *do*
- Tick quarantine boundary (now Absolute) *do*
- Location of Inspectors *do*
- Location of cattle dips *do*
- Stock routes *do*
- Rabbit proof fences *do*

*NOTE*—The Prohibitory Line adopted by the Conference is shewn thus and extends from the South Australian Border to the Coast at Port Curtis near Gladstone.

PLAN  
showing  
PASTORAL LEASES AND CLAIMS  
IN THE  
NORTHERN TERRITORY  
OF  
SOUTH AUSTRALIA  
Compiled in the  
SURVEYOR GENERAL'S OFFICE  
ADELAIDE  
1896

Lease Numbers shown thus 156

The boundaries of Leases and Claims with the natural features are in many cases only approximate and these should be taken into consideration when the actual positions of rivers and starting points are known.



Line referred to in Gazette 18 6 96 File slip attached \*

THE PROVISIONS OF THE HEAD OF THE FIRST  
Section of the Act of the 22nd of August 1894  
relating to the Northern Territory of South  
Australia shall apply to the Northern Territory  
of South Australia as if the words "Northern  
Territory of South Australia" were inserted  
in the said Act of the 22nd of August 1894  
and as if the words "the Northern Territory  
of South Australia" were substituted for the  
words "the Northern Territory" in the said  
Act of the 22nd of August 1894.

1896.

—  
LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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INTERCOLONIAL STOCK CONFERENCE.

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REPORT OF THE PROCEEDINGS

OF THE

MEETING OF EXPERTS,

HELD IN

SYDNEY, AUGUST, 1896.

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*Printed under No. 24 Report from Printing Committee, 29 October, 1896.*

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SYDNEY: CHARLES POTTER, GOVERNMENT PRINTER, PHILLIP STREET.

—  
1896.



# TICK CONFERENCE.

## REPORT OF PROCEEDINGS.

Meeting of Experts held in Executive Chamber, Chief Secretary's Office

12th, 13th, and 14th AUGUST, 1896.

### Present:

<i>New South Wales:</i>	{ A. BRUCE, Chief Inspector of Stock. E. STANLEY, F.R.C.V.S., Chief Veterinary Inspector. N. A. COBB, Ph.D., Pathologist to Department of Agriculture.
<i>Queensland:</i>	{ P. R. GORDON, Chief Inspector of Stock. C. J. POUND, F.R.M.S., Director of the Stock Institute.
<i>Victoria:</i>	{ G. PENTLAND, Chief Inspector of Stock. Professor WALLACE. S. S. CAMERON, M.R.C.V.S., Health Department, Victoria.
<i>South Australia:</i>	C. J. VALENTINE, Chief Inspector of Stock.
<i>Tasmania:</i>	T. A. TABART, Chief Inspector of Stock.
<i>New Zealand:</i>	J. A. GILRUTH, M.R.C.V.S., Government Veterinarian.

THE experts met at 3:30 p.m.

The PRESIDENT (Mr. Sydney Smith), in opening the meeting, said:—Gentlemen, the representatives of the various Colonies met this morning, and determined upon a mode of procedure with regard to the tick fever question. A number of suggestions were submitted and discussed, and it was determined by the members of the Conference that these suggestions and opinions be referred to yourselves for discussion, and that you should supply the information asked for in the statement now before you, with the view to enabling the delegates to place definite recommendations before their respective Governments. There are one or two additions which the members of the Conference thought fit to make in connection with this matter, which I will read to you. They are—

- (1.) Are there any instances in which the tick infest the cattle without being followed by symptoms of red-water, or the disease known as tick fever?
- (2.) What is the length of time the tick will live without finding a host?
- (3.) How long will the tick live on the untreated hide?

I need hardly say that I welcome you, and believe that the deliberations of your meeting will result in benefit to the Colonies, which is so necessary in connection with the tick disease at the present time. I feel certain you will give the matters before you your earnest attention, and I am sure you will be able to submit to the delegates a resolution as to the course to be recommended for the various Governments to pursue. I think the Conference may now leave you to discuss these questions among yourselves, and possibly you may be prepared to submit a joint report to them to-morrow morning. It is possible that all the experts may not agree on the different questions, and we should like to have the reasons of any of the gentlemen who so differ, because it is only by getting all information on the matter that we can hope to arrive at proper decisions. It would be best for you, gentlemen, to elect a Chairman. The members of the Conference will now adjourn until to-morrow morning, at 11 o'clock, when the experts will, I hope, be able to furnish information on the matters they will have dealt with. We are anxious to get the best information on the subject, which it is felt sure you will give us. Unfortunately, very few experiments have been carried out in the matter, and we have very little definite information to go upon. However, I feel sure that your discussion cannot result in anything but valuable information being given to the Conference.

On the motion of Mr. PENTLAND, Mr. Bruce was elected to the Chair.

Mr. BRUCE said he thought that before commencing business there were several matters to be considered which would, if settled, greatly facilitate the proceedings. One important matter was the voting power of each Colony. He thought each Colony should have two votes, otherwise he thought it would be very unfair to Tasmania, New Zealand, and South Australia, who had only one delegate each. New South Wales had three delegates.

Mr. PENTLAND proposed that each Colony should have two votes.

Mr. TABART seconded the motion.

Dr.

Dr. COBB said he would like to offer an amendment and an explanation of that amendment. At the Rust in Wheat Conferences that had been held, the number of delegates from each Colony had been unequal, but the voting had been satisfactory; and it seems to him that they, as a Board of Advice to the different Governments, might give their votes individually. He would, therefore, suggest that voting be by individuals rather than by Colonies.

Professor WALLACE supported the amendment. There was a great deal in its favour. They were all present on equal terms, and he thought they should lose sight of the fact that they belonged to any one Colony.

Mr. BRUCE said the question of the disease affected the different Colonies, and they should have equal voting power.

Professor WALLACE thought it would be rather a difficult matter to decide which expert of a Colony should not vote.

Mr. PENTLAND suggested that each Colony should have three votes instead of two. He thought that would equalise matters.

After some further discussion, it was decided to equalise the voting power by giving each Colony two votes.

Mr. BRUCE then suggested that the time allowed for speaking should be fixed.

On the motion of Mr. PENTLAND, seconded by Mr. VALENTINE, it was decided that five minutes be allowed each speaker.

The meeting then proceeded to discuss the different questions as on the business paper.

## SUBJECTS REMITTED TO COMMITTEE OF EXPERTS FOR CONSIDERATION AND REPORT TO THE CONFERENCE.

### 1. In what Colonies does the Disease exist?

*Answer*:—Queensland, the northern territory of South Australia, and it has been reported in Western Australia.

### 2. What is Tick Fever?

Mr. BRUCE: Mr. Pound agrees with the views of the American authorities.

Dr. COBB said it must be borne in mind that he was not speaking from actual investigation. He was taking statements that had been set down by the different investigators as facts. It must not be thought that he was going to enter into an elaborate discussion of a theory that had no practical value. The theories that were propounded with regard to this fever were of a most important nature. It seemed to him that insufficient attention had been given to the nature of this so-called micro-organism. It was a very startling theory that had been formed. The tick produces certain effects in animals, and when the blood of these animals is examined the corpuscles are found to contain certain things, and it has been concluded by some, and, he thought, the majority of these investigators, that these so-called micro-organisms are really the cause of the fever. The blood has been taken from infected animals and put into the blood of healthy animals by subcutaneous injections, and these cattle show the fever and their blood also shows the micro-organisms. The theory is that the disease is transferred by ticks. Then the investigators said that they had found these so-called micro-organisms in ticks, and if infected cattle were taken into clean country and the ticks fall off and lay their eggs, which produce young ticks, these ticks if placed on healthy animals in this healthy country would produce the disease. Therefore the investigators were driven to the conclusion that these so-called micro-organisms could be transmitted through the tick's egg into its progeny. That was going a long way, because that is a very uncommon thing in connection with other diseases. The logical conclusion of the opinions of these investigators was that any tick and every tick passed the micro-organism through every one of its eggs—through every one of its young. Now he might say that before this theory were adopted and acted upon, we should consider it carefully. We must act upon conclusions that we can draw from facts. The American laws are based upon these deductions, and it seemed to him that before we accept any theory and base action upon it, we should see whether there is any other supposition that is less violent—that is, less in contradiction to scientific experiments. His object in speaking in this way was to call Mr. Pound's attention to facts that he might perhaps have not taken sufficiently into consideration, because it seemed to him, as a man trained for this sort of investigation work, that Mr. Pound, in carrying out these investigations in the Colony in which the disease had manifested itself, had omitted this important investigation. The lines are—that ticks should be carefully examined, and many of them, too, in order to ascertain the exact nature of these so-called micro-organisms. In his opinion it is not beyond possibility that it was not a micro-organism at all. It was within the bounds of possibility that such a so-called micro-organism may actually be physiologically a part of the tick, and is shed from the inner coating of the stomach of the tick for the purpose of digesting the blood corpuscles. Being free cells, the multiplication might possibly take place in other places than in the stomach. He did not advance this as a theory, but he just mentioned this to show that other theories were possible.

Dr. COBB wished it to be well understood that he did not advance the theory explained by him, but merely mentioned it to show that theories other than the American are possible, which was, he thought, perhaps too violent.

Mr. POUND thought these organisms were mutual parasites of ticks, and are always present. As a result of Dr. Hunt's investigation, it was contended that the bodies found in the ticks were analogous to the organisms found in the blood of the infected animal, which was the point on which he (Dr. Hunt) advanced his theory.

Mr. WALLACE considered the matter brought forward by Dr. Cobb most important, but he thought the theory advanced by the American experts the only reliable one. Their work went to show that the parasite is conveyed from the tick to its egg, and from the young tick to the animal. The American experts are not clear about the fully developed organism being found in the tick. It is in an arrested form, or an imperfect form, and he did not think it was in the form that would pass into the animal's body. He thought so far as he could make out that the organism must pass as a spore from the tick into the animal. The spore, he did not think, had yet been seen or demonstrated. They had

had not seen it in the egg, nor could they say in what way it passed. They did know it had never been conveyed from the tick to the animal by injecting the juices of the tick into a healthy animal. He referred to South Africa, where in certain areas ticks have never conveyed diseases. The ticks may have come here in an infected condition, he would not say diseased condition, and it would be possible for them to infest the country. He thought their inclination should be rather to support—subject to further experiments—the ideas expressed by the Texan authorities, viz., that directly the tick has to do with conveying the disease to cattle.

Mr. POUND: Dr Cobb's remarks suggested that these organisms which are found in the blood of infected animals were cell elements of the tick, and the tick injected them into the animal for a certain purpose. That theory had been advanced some months ago by Dr. Hunt; but Dr. Hunt concurred with him in withdrawing it. They had taken a definite quantity of blood from a diseased animal, and injected it intravenously into a healthy animal, and produced a typical form of disease in the absence of tick. Before Dr. Hunt left they had carried it on through fourteen successive generations, and in every case the injection caused acute disease. From the investigations he had conducted he scarcely thought it could be said that these organisms were a physiological part of the tick. With regard to Professor Wallace's reference to the American reports, he said that this organism could not be the cause of disease, but only asserted that the cause might be some poison. Now that was impossible, because if the blood were taken and passed through several generations, the poison would be so diluted as to lose its effect. He was speaking of some chemical property of the tick. Did Professor Wallace mean the poison of the organism?

Professor WALLACE: The poison may not be the cause, but only an associate of the organism. It is quite evident you think there is a possibility of it.

Mr. POUND thought it would settle the point once and for all to pass the blood from an infected animal through a Pasteur-Chamberlain filter, and then inject it into another animal. It appeared at the present time that the disease was purely a mechanical process. He disagreed with Dr. Hunt, who said he found identically the same organisms in the blood examined. His principal reason for saying so was that the bodies found in the young ticks were not distinctly motile. But the bodies found in infected animals were decidedly motile and possessed flagella. Now, he thought it was a very difficult thing to draw a distinct line of demarcation between motility and molecular action in such small organisms. He had tried a number of experiments by mashing the ova, larval ticks, and adult male and female ticks, from infected animals, with salt solution, and injecting it into the jugular veins of healthy cattle, and had always found the same negative results. Dr. Hunt also conducted similar experiments with the same results, and he had read that the same thing occurred in connection with experiments carried out in America. Dr. Cobb might think that they had not investigated the bodies of the tick, but that had been done, and it was intended to continue such investigations.

Mr. VALENTINE: What is tick fever? that is the question we have to settle.

Mr. PENTLAND: I think that, as Mr. Valentine has said, our object is to get together all the information we can as to the nature of the disease and how it is transmitted.

Mr. GORDON: Well, it is only fair to Dr. Hunt and Mr. Pound to take their description.

Mr. PENTLAND: We have the American description, but Mr. Pound's description is more favourable.

Mr. POUND (in reply to Professor Wallace): Reports from South Africa, which I have received, are not based, so far as I can see, on scientific investigation at all. In recent letters from South Africa (Natal) they distinctly disagree with us with regard to the disease being caused by the tick.

Professor WALLACE: Natal is not the place at all.

Mr. STANLEY did not think red-water and ticks are so intimately associated as is reported. His opinion was that cattle when in a debilitated state from red-water disease might succumb sooner when attacked with ticks, but their deaths would be due to the combined causes—red-water and ticks.

Mr. POUND contended that red-water could not be got without ticks in Northern Queensland. Whenever ticks were introduced on to an animal, typical red-water symptoms made their appearance.

Professor WALLACE: Quoting from Dr. Hutchens' report:—*Red Water*.—"I think it would be a good thing if this report were spread abroad. It is very brief and contains a good definition of what this disease really is."

Mr. POUND: That has recently appeared in the *Sydney Mail* and other important papers throughout the Colonies, fully illustrated, and giving full details of the disease, the life-history of the cattle tick, and everything about it.

The CHAIRMAN: We wish to lay something with regard to the main question before the Minister in the form of a resolution.

Professor WALLACE: It seems to me that all that is asked in connection with this question are the symptoms, and 1 and 2 take in the whole matter. I would suggest that this report (Dr. Hutchens') be written out as a reply to the question.

It was resolved, on the motion of Mr. VALENTINE, that the answer to Question No. 2 be, "The following conclusions arrived at by the experts of the American Department of Agriculture and confirmed by the experiments of Mr. Pound and Dr. Hunt."

It is not only the opinion of Mr. Pound, the Director of the Stock Institute, Brisbane, and Dr. Hunt, of Hughenden, after careful investigation and test, but also that of Dr. Salmon, the Chief of the Bureau of Animal Industry at Washington, in the United States, to whom full particulars of the Queensland tick and its life-history and effect were forwarded, that the "Tick Fever" of Queensland is identical with "Texas Fever" of America.

As this is the case, and as a thorough and exhaustive investigation was, during the years 1889, 1890, 1891, and 1892, carried out by the ablest scientists in the States, under Dr. Salmon's direction, as to the nature, causation, and prevention of Texas Fever, no better description of the disease now prevalent in Queensland can be given than that contained in the report giving the result of these investigations, and published by the United States Department of Agriculture, Bureau of Animal Industry, Bulletin No. 1, 1892. It is to the following effect:—

#### Conclusions.

1. Texas Fever is a disease of the blood, characterised by destruction of the red blood corpuscles. The symptoms are partly due to the anæmia produced, partly to the large amount of debris in the blood, which is excreted with difficulty, and which causes derangement of the organs occupied with its removal.

2. The destruction of the red corpuscles is due to a micro-organism or micro-parasite which lives within them. It belongs to the Protozoa, and passes several distinct phases in the blood. 3.

### 3. Is Tick Fever purely a Bovine Disease?

Mr. POUND: Strictly bovine.

Dr. COBB: Would you mind recounting the details of the experiment with horses?

Mr. POUND: I remarked that it had often been argued that horses suffer from this disease. It was perfectly true that horses become covered with ticks. For the experiment in question they took 20 c.c. of blood from an infected beast, and injected 10 c.c. into the blood of a bullock, and 10 c.c. into the blood of a horse. The bullock developed all the symptoms of the disease; while the horse showed no change from normal condition. The blood of these animals was repeatedly examined for several days at regular intervals of a few hours, and the examinations were continued at intervals for seven or eight days. The organisms were present in the bullock, but absent in the case of the horse. He thought the results of these and other experiments proved pretty conclusively that the disease was strictly bovine.

*Answer*:—Yes, from results based on experimental evidence.

### 4. Is the Disease indigenous, or was it introduced?

Mr. POUND pointed out that there were certain species of ticks indigenous to certain parts of Australia, and he produced a species of tick which, so far as is known, is indigenous to the western parts of Queensland. From this fact he could not see why the tick associated with the disease under notice should not be indigenous to the Northern Territory.

Mr. STANLEY moved that answer to Question 4 be, "We do not know."

Seconded by Mr. PENTLAND.

Carried.

### 5. When was attention first drawn to the Disease?

Mr. VALENTINE could not exactly say what year attention was first drawn to the disease, but it was about 1878 when first heard of. In reply to Mr. Pound, he said that plenty of ticks were found when the first cattle were taken to the Northern Territory by Dr. Brown, about nineteen years ago, but there was no red-water.

Mr. POUND referred to a drover who showed him his note-book, wherein was an entry, made some fourteen years ago, of his cattle dying, upon which were ticks, but at the time he had no idea that they had anything to do with the disease from which the cattle died; but from recent events he was inclined to think that the ticks were in some degree responsible for the deaths.

Mr. VALENTINE moved,—“That attention was first drawn to the disease about eighteen years ago, on the road between Queensland and Northern Territory, near the Roper River.”

Seconded by Mr. PENTLAND.

Carried.

### 6. Its introduction and spread in Queensland.

Mr. GORDON said that he knew the information set down in Mr. Bruce's paper to this question to be absolutely correct, and it was thereupon accepted. It reads as follows:—

The first intimation of tick fever being in Queensland was received in 1891. The disease was carried there by cattle from the northern territory of South Australia, but its introduction was not then regarded in a serious light by cattle-owners. In the course of a year or two, however, through the introduction of other infected cattle, and the spread of the disease from those first introduced, owners became alarmed, and Mr. Pound was, as stated, sent by the Government to investigate and report. He found that the disease at first spread slowly in Northern Queensland, but that latterly it did so in a comparatively rapid manner.

The bullock teams and drift of stock from the Northern Territory and the western portion of Northern Queensland to the boiling and extract works on the Albert and Norman Rivers had carried the infection both in a southerly and easterly direction to a good many herds in that part of Queensland, inflicting very serious loss; but, as a rule, the losses were not so heavy in the country at some distance back as on the coast.

Before long the infection was carried to the east coast, and there the losses have frequently been very heavy, nor are they as yet, it would seem, over, while it is doubtful if the disease is not still spreading, and the whole of the coast country, from Rockhampton to Thursday Island, cannot be otherwise termed than infested or suspected.

The infection was also carried from the gulf country in another direction by infected cattle travelling from the country on the Flinders, by Kyunah and Winton, to Longreach, where after some delay they were sent on to Barcaldine and trucked to Rockhampton for Lakes Creek; and although no deaths are reported among the cattle infected by those from the Flinders, ticks have been found on some of them, and the question whether or not the disease will spread from this centre of infection will not be settled until it is seen whether the warm weather of spring and summer does not call the ticks into activity.

### 7. The extent of the Disease in Queensland.

The extreme north and south points known to be infected with tick fever in Queensland are Thursday Island in the north, and Longreach in the south, and the extreme east and west points may be said to be Townsville on the east, and the Nicholson River on the South Australian border on the west. That is to say, the disease has spread from the Gulf of Carpentaria as far south as the Tropic of Capricorn and as far north as Thursday Island, but only to certain localities in that portion of the Colony. If the whole of that portion were infected, that would mean that fully one-half of the Colony was so; but while large tracts of country along the south and part of the east sides of the gulf and on the eastern seaboard of the Colony are decidedly infected, and considerable areas between the infected country on the gulf and that on the eastern seaboard, suspected of being infected, it is believed that at least one-half of that portion of the Colony north of the Tropic of Capricorn is still free from the infection, and that, therefore, not more than perhaps one-fourth of the Colony is infected or suspected of being infected.

Mr. GORDON referred to the map of Queensland which was on view, whereon were shown the clean and infected districts, &c. He referred to the Act recently passed by the Queensland Government to cope with the pest, copies of which were handed to the gentlemen present. The Act, he remarked, was a very stringent one, and was thought quite sufficient to meet all requirements.

8. Incubation of the Disease. 9. Most noticeable Symptoms:—(1) Acute Type; (2) Mild Non-fatal Type; (3) The effects of the Disease on Calves and the deductions therefrom. 10. Most noticeable *Post-mortem* Symptoms:—(1) The Spleen; (2) The Liver; (3) The Bile; (4) The Kidneys. 11. The Cattle Tick and its Life History:—(1) The Ticks on Cattle; (2) The Ticks when they leave the Cattle; (3) The Incubation of the Tick; (4) Where young Ticks settle on Cattle; (5) The effect of the Ticks on the Cattle.

Dr. COBB moved,—“That the notes furnished by Mr. Bruce on these questions be accepted as they stand.”

Mr. TABART seconded.

Carried.

### 8. Incubation of the Disease.

The period of incubation has been ascertained by subcutaneous injection into healthy cattle of the blood of cattle suffering from the disease. When the blood has been injected the fever temperature appears within a few days, and outward signs of illness are manifested on, or even before, the sixth day, and the external symptoms appear from six to ten days.

### 9. Most noticeable Symptoms.

#### (1.) *Acute Type.*

This type is the disease of the hot summer months, and appears suddenly and among all the animals exposed to the infection, and of course can be observed sooner by taking the temperature with a thermometer than any way else, the temperature in the case of disease ranging from 105 to 108 Fahr. When very high it can be detected by touching the skin. Next to the temperature the colour (red or yellow) of the urine is noticeable. Constipation is another symptom, and loss of appetite and cessation of rumen usually take place from three to five days; and in the case of milch cows cessation of the flow of milk followed by loss of sight, swaying of hind-quarters, and trembling of the muscles, especially of hind-quarters, and thinness of the blood, follow.

This type of the disease usually runs its course in a few days, the animals dying or surviving according to the virulence or otherwise of the disease. A good many of those that do survive do not regain their original vigour, while the others do so in a few weeks.

#### (2.) *Mild Non-fatal or Chronic Type.*

This type of Texas fever which, in America, is only to be met with in the autumn, is hard to distinguish from other ailments, as the only outward symptoms are slight loss of appetite and dullness, while the temperature very seldom rises above 105 in the evening, and the destruction of the blood corpuscles goes on slowly. It will be noticed that the season of the year and temperature has a good deal to do with the type of the disease, the mild form being in the cooler season of the year.

#### (3.) *The effect of the Disease on Calves and the result.*

During the discussions which have taken place with respect to this disease, statements have over and over again been made that cattle in the Gulf country, although covered with ticks, do not now die, while it is reported on equally reliable reports that ruinous losses have sooner or later followed the first infection of herds in other portions of that part of Queensland, and more especially on the coast country on the eastern side of the Colony. This, to those who are unacquainted with the explanation, must appear very contradictory; and the explanation is simple, and lies in the fact that calves and young cattle although attacked by the disease when infested with ticks very seldom die; and as they are not, as a rule, subject to another attack, or at any rate to another attack which proves fatal, they grow up immune, and although perhaps inconvenienced by the ticks they seldom or never exhibit any serious symptoms of fever. While, however, this is a fortunate matter for the owners of cattle already infested; it in no way removes the obligation on those charged with the protection of our flocks and herds to do everything possible to stay the spread of the disease, especially as it is questionable with our Australian climate whether when land is once infested it can ever after be eradicated.

### 10. Most noticeable *Post-mortem* Appearances.

#### (1.) *The Spleen.*

One of the most noticeable *post-mortem* appearances in Texas Fever is the enlargement of the spleen to two or even four times its natural weight, through engorgement with red blood corpuscles or their remains in the form of irregular lumps of yellowish pigment. This destroys the structure of the spleen, and, of course, completely arrests its functions.

#### (2.) *The Liver.*

Though not so noticeable as that of the spleen, the destruction of the liver is perhaps a more important matter, through its enlargement, congestion, bile ingestion, and fatty degeneration. The increase of weight ranges from 3 lb. to 5 lb. heavier than a healthy liver, and when diseased the liver is paler than a healthy one and has a peculiar mottled appearance.

#### (3.) *The Bile.*

That found in the gall bladder (of which there is usually a considerable quantity—one half-pint to a quart) has exchanged its limpid fluid appearance for an almost semi-solid mass.

#### (4.) *The Kidneys.*

In a good many cases the kidneys are in a sero-sanguinolent condition of the connective tissue, and the fat about the kidneys; and in acute cases they are enlarged and of a brown colour.

## 11. The Cattle Tick and its Life History.

Among the conclusions come to, as the result of the investigations instituted by the Department of Agriculture in the United States, with respect to Texas Fever, No. 5, is to the effect that the disease in nature is transmitted from cattle which come from the permanently infected territory to cattle outside this territory by the Cattle Tick (*Ixodes bovis*), of which the following is a brief description, taken principally from Mr. Director Pound's report:—

### (1.) *The Ticks on Cattle.*

The mature female tick, as seen on the animal's skin, has an oblong oval-shaped body resembling the seed of the castor oil plant, and is of a dull leaden colour due to the blood red contents of the body showing through the distended semi-transparent cuticle. It rarely exceeds twelve millimetres ( $\frac{3}{4}$  inch) in length, and seven millimetres (a little less than  $\frac{3}{8}$ th inch) in breadth, and possesses four pairs of legs situated on the anterior lateral portion of the body. It attaches itself to its host by means of peculiarly constructed mouth organs collectively known as the rostrum, in the centre of which is a barbed dart furnished on either side with several rows of teeth set obliquely, which enables the creature to adhere to the skin more firmly.

The male tick is usually found attached to the skin of its host immediately underneath the anterior part of the female. Its body is of a dark brown colour and somewhat triangular in shape, and when full grown is only about one-fiftieth part of the size of the fully developed female, and never being in an engorged state, is very much more active and also stronger than the female.

### (2.) *The Ticks when they leave Cattle.*

As the female tick engorges herself with blood she becomes fecundated by the male, and having arrived at maturity, releases her hold from the skin by withdrawing the barbed mouth organs, and falls to the ground; on recovering herself she walks away to some secluded spot where she remains quiescent for about eight or ten days, during which time the contents of the abdomen are undergoing important changes prior to oviposition (the process of egg-laying), the period of which generally takes from seven to fourteen days. As a rule, the fully matured ticks lay from 1,600 to 2,000 eggs, which are agglomerated in a dense mass. As oviposition proceeds she gradually gets smaller or shrivels up, and ultimately dies beside what will be subsequently her own progeny. What becomes of the male tick is not known. He may go in search of another female, but he most likely dies.

### (3.) *The Incubation of the Tick.*

The period of incubation in a temperature ranging between 90 and 110 Fahr. was from fourteen to twenty-six days, but when the temperature is lower the incubation period is longer, as long as three or four weeks or even longer.

When the young tick emerges from the shell, it has only six legs, and is of a light brown colour, but gradually assumes a much darker shade. In this stage the young ticks are extremely active. They are very tenacious of life, surviving in a very low temperature, and living in well stoppered bottles seventeen weeks without food or water, or even fresh air.

No further development takes place in these ticks until they gain access and adhere to some animal and get nourishment from the blood, when in the course of seven or eight days they have their first moult, growing, and changing their colour, which becomes darker, and now having four instead of three pairs of legs. Then in seven days more the second moult takes place, and the tick is sexually mature. From this time till about the 21st to the 22nd day, the female increases in size till she is fifty times the size of the male. She is then fully engorged and fecundated, and drops off to lay her eggs as already explained.

### (4.) *Where the Young Ticks settle on Cattle.*

In some instances the cattle ticks are present in extraordinary numbers; at times fairly equally distributed over the whole of the animal's body, and at other times crowded on particular portions of it. As many as 40,000 were found on one animal, and then the whole were not counted. The ticks, as a rule, prefer the thin soft portions of the skin; for instance, along the belly, on and around the udder or scrotum, on either side of the neck, in and outside the thighs, and on the twist.

### (5.) *The effect of the Ticks on the Cattle.*

Dr. Salmon says that it has been demonstrated that ticks carry the infection of Texas Fever, the micro-organism; they introduce it into the tissue of susceptible cattle, and produce the disease. There is thus a complicated infection in which two very different kinds of parasites play an important part. He further says, another discovery not less marvellous has been made—that the micro-organism, which constitutes the contagion, is transmitted through the egg to the young tick, and it is this, and not the adult tick carried by the Southern (the infested) cattle, which finds its way upon susceptible animals and causes the disease: That is to say, if cattle infested with ticks are brought into contact with sound cattle it is not these ticks but their progeny (see conclusion 6) which infest the sound cattle, and transmit the micro-organism which sets up the fever. On the micro-organism being introduced into the tissues of susceptible cattle it takes possession of and multiplies in the blood corpuscles and disintegrates and destroys them. This, of course, in the mild type of the disease, leads to poverty in the blood, and the cattle become poor and weak. In the acute type again fever follows, which frequently results in death. All this is fully confirmed by Mr. Pound and Dr. Hunt's investigations in Queensland.

## 12. Steps taken by Queensland to arrest the Disease, and the result.

(1.) *Quarantining Infected Stock*; (2.) *Fresh Legislation*; (3.) *Dipping and Erection of Dips*.

Mr. GORDON's remarks:

### *What Queensland has done.*

Under the new Act the Colony is divided into three zones—

- (1.) That north of a line generally following the 21st parallel, south of which no stock can pass under any conditions.
- (2.) The central zone lying between the 21st and 24th parallels.
- (3.) The portion lying between the 24th parallel and the boundary with New South Wales.

#### (1.) The Northern Zone.

In respect of stock in this zone—

- (1.) None shall pass south of the southern boundary.
- (2.) No stock in the infected portions shall leave such portions unless for immediate slaughter, and then only within that zone.
- (3.) If it is intended that stock from any portion of the zone are to be travelled through any other portion not declared infected, they must be properly dipped immediately before entering on the uninfected country.
- (4.) When any of such stock are to be carried by train the trucks will be thoroughly disinfected.
- (5.) At the point of slaughter the stock will not be permitted to be in contact with other cattle.

#### (2.) The Central Zone.

- (1.) This zone has been patrolled by reliable officers specially selected for the purpose, and the infested centres delimited and mapped out.
- (2.) The eastern centre of infection at North Rockhampton has been proclaimed an absolute quarantine.
- (3.) The western centre of infection, as shown on the map, is declared an infected area.
- (4.) No stock can leave the infected areas except for immediate slaughter within the zone, and under the same precautionary conditions as are observed in the northern zone.
- (5.) No stock to be admitted south from the clean portions of this zone until after having been dipped at a point on the line of Central Railway, about 30 miles north of the southern boundary of the zone.

#### (3.) The Southern Zone.

In this zone the Board of Stock Commissioners have already dealt with the subject of controlling cattle traffic, by—

- (1.) Determining the points along the northern line of rabbit fence at which only stock from south of the 24th parallel can pass.
- (2.) By enforcing inspection of the cattle at those points.
- (3.) By defining stock routes from those points, both on the map and by letterpress description, by which only cattle may travel to the border.

Mr. PENTLAND: Seeing that this intermediary zone is of similar character to the country that is known to be infested, and is of such a vast extent that, unless officers were stationed at reasonable distances throughout it, it is impossible to say to what extent this territory might be infested with ticks. All cattle within this intermediary zone should be absolutely prohibited from leaving unless it could be proved beyond any doubt that they were absolutely free from ticks. In short, no cattle should be allowed to come south of the intermediary zone under any circumstances, seeing that it is already infected.

Mr. GILBERT asked Mr. Gordon whether there was anything on the territory corresponding to the red and blue lines on the map—that is to say, whether the country was fenced along the lines indicated.

Mr. GORDON replied that it is not all fenced. The topographical features of the country prevent free movement of stock.

Mr. POUND explained that along a certain railway line that was proposed as a boundary there were 10 miles of line unfenced, and he failed to see what was to prevent infected cattle crossing to the southern side of that line. He thought that every precaution should be taken to prevent this.

Mr. GORDON explained that the character of the country indicated by Mr. Pentland was altogether unfavourable for ticks. He thought his Government would gladly accept any advice that could be offered with regard to remedial measures, &c., but scarcely thought they would care for anyone to dictate as to what areas within their own Colony should be placed under quarantine.

Mr. PENTLAND: In my opinion there is no difference between the two classes of country. The risk is so great that every possible precaution should be taken to guard against any further spread.

Mr. GORDON: Mr. Tozer has assured the Ministers of the other Colonies about this matter, and they have accepted his statements in good faith. It was not intended, however, that this Conference should discuss this topic.

A considerable discussion took place as to the subjects of a definite resolution.

Professor WALLACE: There is no such thing as absolute immunity from attack. If cattle that have been suffering from the mild form are removed to clean country, and returned to the infested country eight or nine months afterwards, they will take the fever as readily as beasts that have never been before attacked by ticks. A good deal of danger is run in the case of working bullocks that travel from place to place through infested districts.

Mr. POUND: I refer to cattle that remain in the district.

Mr. PENTLAND moved,—“That this meeting regrets that the intermediate infected area between the 21st and 24th parallels has not been included in the zone known as the absolutely restricted area, which lies to the north of the 21st parallel.”

Mr. TABART seconded, and he pointed out that cattle infested with tick while in transit would in all probability infect the railway line, which is unfenced, and cattle grazing backwards and forwards would pick up tick in that way; and very likely this had already been done.

The Chairman ruled that the matter could not be discussed.

Mr.

Mr. PENTLAND: I think you might take the opinion of the meeting as to our power to deal with it. I do not think that, as a conference of experts and practical men, it should be necessary for us to submit a matter of this kind to the Minister. We have surely sufficient common sense and practical experience to enable us to draw up a definite recommendation that will tend to safeguard the interests of all the Colonies without bearing too hard upon Queensland.

Mr. VALENTINE: I quite agree with Mr. Pentland.

Professor WALLACE: I move as an amendment,—“That this meeting consider the steps that should be taken for the suppression of the disease.”

Amendment lapsed—no seconder.

Dr. COBB: We simply wish to give an expression of opinion.

Mr. PENTLAND: We just want to express as an opinion, not as a resolution, that certain country should be included in the restricted area.

Professor WALLACE moved,—“That the meeting under No. 12 be permitted to consider the regulations established by Queensland for the suppression of the disease, the object being to discuss infected areas.”

Mr. GILRUTH seconded, and the motion was carried.

Discussion on Mr. Pentland's motion was then resumed.

Mr. VALENTINE did not think the motion necessary, as there was no danger from the catt travelling over the unfenced railway line referred to. He would suggest that the areas known to be infected be included in the prohibitory zone. If the Queensland inspectors find that there are other areas infected other than those at present set down on the map, the Queensland Government would immediately proclaim them to be infected areas, and at once include them in the prohibitory areas. They could only be guided by the Queensland inspectors, who would, they were well aware, stop the spread of the tick disease as much as they possibly could.

Mr. PENTLAND pointed out that the object of his motion was to stop all cattle from travelling below the line running along the 24th parallel.

Mr. VALENTINE moved, as an amendment,—“That the infected areas in the central zone be dealt with in the same manner as in the prohibitory zone, and stock from the uninfected portion of the central zone be allowed to cross the 24th parallel on inspection and dipping.”

Professor WALLACE said he would second Mr. Valentine's amendment if he would agree to the area east of the Boomer Mountains and that west of the Great Dividing Range being included in the infected area.

Mr. GORDON here lodged the following protest:—

We protest against this resolution being put to the Conference, for the reason that the Government of Queensland being acquainted with all the circumstances connected with the spread of the pest, the topographical features of the Colony, the geological formations favourable and unfavourable to tick life, and the vegetation favourable to tick, and that Queensland is, and has been, doing all that is deemed necessary to protect the herds in the southern part of the Colony, and by so doing are doing their utmost to protect the herds of their neighbours.

Mr. VALENTINE did not think so large an area should be included as infected as suggested by Professor Wallace, but thought that so long as a certain area of uninfected country surrounded each infected area the matter would be sufficiently met.

Mr. GORDON, in reply to a question, said that it was the practice to take infected stock from infected country (tinted central portion of the Colony map) and send them along the unfenced railway line for slaughter without being dipped.

Mr. PENTLAND thought the portion of the Colony to the east of the Boomer Range was the most dangerous part to guard against.

Mr. GORDON pointed out that all the herds in that part had been inspected. The country shown by pink tint, at Rockhampton, on centre of map was, he thought, the most dangerous.

Mr. PENTLAND was of opinion that the district should be constantly inspected, and, moreover, they should not trust to lots of boys, whom the stations now employed, but reliable men.

Mr. Pentland's motion, which had been seconded by Mr. TABART, was then put to the meeting. The voting was even in number, but as three of the Colonies, Queensland, New South Wales, and South Australia, were against and two for, viz., Victoria and Tasmania, the motion was negatived. New Zealand did not vote.

A discussion then took place on the following report by Mr. Bruce. On the motion of Mr. TABART, seconded by Mr. GILRUTH, it was taken as it stood, with the addition of Mr. Gordon's earlier remarks:—

#### (1.) *Quarantining Infected Stock.*

In October, 1894, the whole of the Gulf country and Cape Peninsula west of the 144th meridian was placed in quarantine, but the ticks shortly spread beyond the limit notified towards the eastern seaboard. On this being found to be the case, a fresh quarantine was in November, 1895, notified across the Colony from east to west, following generally the 21st parallel; but although this has to a certain extent stayed the spread of the disease, it has not proved thoroughly effective, for teamsters and drovers have on several occasions broken the quarantine and carried the infection to clean country, where the owners again have concealed the existence of the disease; and these breaches of the law have occurred through the Act under which the quarantine was proclaimed being defective and the staff of inspectors insufficient.

#### (2.) *Fresh Legislation.*

The insufficiency of the staff and the defects of the law were from the first fully recognised. Additional inspectors were appointed, and a very effective and comprehensive measure has been carried through Parliament for dealing with this and other diseases in stock. Under this, with a full staff of inspectors, the true state of the stock in the different localities will be ascertained, the infested runs and holdings will be placed in quarantine, and the provisions regulating the dipping and movement of stock will be strictly enforced. Besides this, the Government is constructing dips on the principal stock routes, and providing the oil for dipping, not only for these dips, but for those erected by owners.

(3.)

(3.) *Dipping for the Destruction of the Tick.*

On information being received some eight or ten months back from America that dipping with oil had proved successful in destroying the tick on cattle, dips were constructed in several parts of Queensland, and a considerable number of cattle were dipped.

As a rule, when the dipping was properly carried out, the ticks were destroyed, but in a good many instances the work was not properly done—too little oil was in these cases used, and there was neglect in other respects. There is, therefore, good reason for believing that, where a sufficient quantity of the right sort of oil is put into the dip, and the process properly carried out, the ticks on the stock will all be destroyed. But while this is the case, the experience so far as yet gained does not go to show that the oil dip will act as a preventive for any length of time, as well as destroy the tick, for young ticks have been found on cattle which were dipped only a fortnight before, and had been carefully examined a day or two after the dipping and found entirely free from living ticks. This is the weak point in the dipping process, and every endeavour should be made to discover some ingredient to use with the oil or other effective medicament which will adhere for some considerable time to the hair, and be so distasteful to the tick as to keep it from coming on the cattle until the effect of the ingredient in this respect has ceased. It is this property in sulphur that makes dips in which sulphur is used so effective in the cure of scab, for the smell of the sulphur in warm weather can be felt three months after the dipping. Notwithstanding this weak point in the oil dip, the defect only applies in the case of cattle which have to be put back again upon tick-infested runs. In that of cattle again, from suspected or doubtful country which their owners desire to travel into clean, it is believed that if they are carefully examined and show no signs of infection and are effectively dipped, they might be allowed to enter, and Queensland cattle about to enter New South Wales might, in order to remove all doubt, be treated in this way. Even as regards cattle on infected runs, it is believed that the process will frequently be turned to good account by watching the seasons and giving repeated dippings when they will have the greatest effect. This will be especially the case as regards dairy cattle and store bullocks put on to fatten. There is a prospect, too, that a suggestion made by Dr. McDonald, of Ingham, will bear fruit. It was that two or three dippings of cattle as they are infested and reinfested will on each occasion check the virulence of the disease, and in this way prevent it from going beyond a mild attack, thereby rendering the animal immune.

The following report by Mr. Bruce on the steps taken by various Colonies to arrest the spread of the disease was then read:—

## 13. Steps taken by various Colonies.

## 1. STEPS TAKEN BY NEW SOUTH WALES.

(1.) *Proclamation and Crossings.*

4th February, 1896.—A proclamation was issued under the "Customs Regulation Act, 1879," prohibiting the introduction of horses and cattle from that part of Queensland north of the Central Railway Line, and only allowing the introduction of them from south of that line on inspection at the crossing-places at—

Ballandeen (Wallangarra),	Barringun,
Mungindi,	Hungerford,
Brenda,	Wompah.

Additional crossing-places have since been notified at Tullabudgera, Mount Lindsay, Acacia Creek, White Swamp, Boggabilla, Hebel, Parragundy, Adelaide Gate.

(2.) *Inspectors and Inspections.*

*Inspectors.*—The Inspectors of Stock at Glen Innes, Warialda, Walgett, Brewarrina, Bourke, and Wanaaring were appointed Customs Officers for the purpose of enforcing the prohibition; and the following gentlemen have been appointed Acting Inspectors and Customs Officers to assist the Staff Inspectors:—

C. D. Whitty, Tullabudgera.	J. A. Robertson, Hebel.
P. B. Chauvel, Mt. Lindsay.	E. Gillespie, Acacia Creek.
J. E. Smith, Wallangarra.	J. R. McGovern, Brenda.
Jas. Skinner, Boggabilla.	S. R. Scott, Mungindi.
Jas. McNall, Barringun.	Peter Jeffrey, Mingoola Station.
John Ducat, Wompah.	

Mr. Jeffrey only inspects stock leaving Maidenhead and Bonshaw Stations, which stations have country adjoining in Queensland, and they are worked as one under Bond.

Thus there are seventeen inspectors now employed on the Border in seeing that the prohibition is enforced, and, in addition, the Collector of Customs and the Inspector-General of Police have instructed their officers on the Queensland Border to assist.

*Action before Crossing.*—Before any cattle or horses are allowed to cross they must give seven days' notice to the inspector at the crossing-place, and produce a declaration by the owner, and a certificate by an inspector in Queensland, that such cattle are not infected.

(3.) *Fresh Legislation.*

On the passing of the Imported Stock Act Further Amendment Act of 1896 proclamations were issued declaring "Tick Fever or Texas Fever" in cattle, horses, or camels to be an infectious or contagious disease for the purpose of that Act, and Queensland was declared to be an infected colony.

(4.) *Erection of Yards for closer inspection.*

It is proposed to erect yards at the principal crossing-places for the closer inspection of stock, and to place them in a crush for that purpose when necessary.

In the meantime the Queensland Government has granted the use of the pound-yards on their side of the Border for this purpose.

(5.) *Regulations, &c., Hides.*

On 4th July regulations were published prohibiting the introduction of hides or skins of cattle, horses, or camels, unless they had been thoroughly salted in a proper pit for one week, and that they were accompanied by a certificate from an inspector that the requirements of the regulation had been complied with.

If accompanied by this certificate the Customs Officers allow the hides to be landed, subject to inspection at the stores to which they may be sent.

The reason for preferring pit-salting to dry-salting are given in the accompanying letter:

Department of Mines and Agriculture, Stock, and Brands,  
Sydney, 30 July, 1896.

Sir,

In reply to your letter of the 28th inst., I beg to state that, if brine of sufficient strength is certain to kill the ticks, then I think there can be no question but pit-salting or pickling is by far the most certain mode of destroying the ticks, inasmuch as the strength of the pickle is the only thing that requires watching, and that can be readily ascertained, for brine will be certain to find its way to every part of every hide in the pit with ordinary care, or even without much care; while in the case of dry-salting, if great care is not exercised, some portions of the hides will be missed. Indeed, we have already found in our examination of the hides, that this happens in not a few cases, and the strong smell of taint, which is at times felt from hides, clearly points to imperfect salting.

We were much alarmed a day or two ago by finding the ticks on a hide of this sort plump and full, but which, although tested, failed to make any movement.

No doubt your Meat Companies and butchers object to going to the trouble and expense of constructing pits, but there can, I think, be no question which is the safer process; and it would be a serious thing for both Colonies if a consignment of hides, with the ticks, were to be sent to Sydney.

I have, &c.,

ALEX. BRUCE,

Chief Inspector of Stock.

P. R. Gordon, Esq.,  
Chief Inspector of Stock, Brisbane.

## 2. STEPS TAKEN BY VICTORIA.

Introduction into Victoria of unsalted hides of cattle prohibited.

Regulation 30th June last admitting hides from Queensland if accompanied by a certificate from an Inspector of Stock at the port of shipment that the hides have been thoroughly and effectively salted.

Queensland cattle, horses, sheep, and dogs by sea prohibited for three months from 14th July proximo.

## 3. STEPS TAKEN BY TASMANIA.

Proclamation, 6th July, 1896, absolutely prohibiting for twelve months the importation of any horses, cattle, and hides from Queensland.

## 4. STEPS TAKEN BY NEW ZEALAND.

Order in Council, 20th April, 1896, prohibiting the importation of cattle, sheep, fresh meat (with the exception of frozen meat), bones, horns, hoofs, hair, hides, skins, offal, or other part of such animals into New Zealand.

## 5. STEPS TAKEN BY SOUTH AUSTRALIA.

1. Proclamation, 17th June, 1896, prohibiting for twelve months the introduction into that part of South Australia south of the 26th parallel of latitude, cattle or horses from Queensland, unless they have been examined by an inspector.

2. Prohibiting for the same time the removal of cattle or horses (except working horses which have been dressed) from that portion of the Northern Territory north of a line commencing at a line at the 450th mile-post on the eastern boundary, between the Northern Territory and Queensland, and thence to the western boundary between the Northern Territory and Western Australia to the point where the southern boundaries of leases 1,809 and 1,811 meet the boundary of Western Australia.

3. Prohibiting for twelve months the introduction into any part of South Australia, south of the 26th parallel of latitude, cattle or horses from that portion of the Northern Territory north of the said parallel, and south of the aforesaid line mentioned in No. 2, unless under a permit from an inspector.

4. Prohibiting for a period of twelve months the introduction into any part of South Australia south of the 26th parallel of south latitude, of cattle, horses, or hides from Queensland or any part of the Northern Territory, unless such hides have been previously salted or dressed.

Steps taken by New South Wales to arrest the disease: Mr. Bruce's report was agreed to, on Mr. GORDON's proposition.

Part II (steps taken by Victoria) accepted, on Mr. PENTLAND's proposition, seconded by Mr. TABART.

Part III (steps taken by Tasmania) agreed to, on Mr. TABART's proposition, seconded by Mr. PENTLAND.

Part IV (steps taken by New Zealand) agreed to, on Mr. PENTLAND's proposition, seconded by Professor WALLACE.

Mr. GORDON, however, drew attention to the regulations recently passed in New Zealand, prohibiting the import of bones from Queensland, which, he thought, was hardly necessary.

Part V (steps taken by South Australia) agreed to, on Mr. VALENTINE's proposition, seconded by Mr. PENTLAND.

## 14. Dipping.

(a) *The best form of Yards.*

Mr. BRUCE: Unless the Queensland delegates have some plans of yards to submit, I do not think we can do anything in this matter.

Mr. VALENTINE: I think we should leave it to Mr. Gordon to submit a plan.

Mr. BRUCE: Yes; I think we should ask Mr. Gordon to submit a plan to-morrow morning.

The meeting agreed to this proposal.

(b)

(b) *The best kind of Oil and other Medicaments.*

Mr. GORDON: I am not in a position to say which of the oils that have been used in Queensland is the best. We have been using cotton-seed oil, a certain oil from New South Wales (which, however, destroys the hides), the Black Virginian oil, which is destructive to ticks, and the Apollo oil, which is also destructive to the ticks. I am not prepared to give any definite information on this point.

Mr. POUND: The oils that are best for destroying the tick are the Apollo oil and cotton-seed oil. The Apollo oil destroys ticks in twenty-four hours, and acts as a preventive for probably a fortnight. In the case of cotton-seed oil, it took a longer period to kill the tick, but it also acted as a preventive for a longer time. It might take nine days for the ticks to die with the cotton-seed oil, but the cattle would not be reinfected for fully three weeks afterwards. All things considered, I look upon the cotton-seed as the best oil. It was the first oil recommended for use in America. Any kinds of oil that I have tried in the laboratory have proved successful in killing the tick in all stages. Then there are various dipping fluids. There are a number of dipping fluids, the basis of which are carbolic acid at the strength of about 1 in 75, the results of which are instantaneous on the larval tick, but require an immersion for a longer period for adult ticks. The important thing in all these dips, which are of a watery nature, is that if you plunge the animal into it, of course, it comes out immediately, and the fluid dries and the ticks still remain alive. I put a number of fully developed female ticks into one of these carbolic solutions for different periods up to sixty minutes. Those that remained up to sixty minutes were still alive, and in the course of a few days commenced to lay their eggs.

Mr. BRUCE: Do you know of any other oil?

Mr. POUND: I have tried thirty or forty different oils in my laboratory, but as to how long they act as a preventive can only be determined by dipping in the infected districts. The people who supplied the oil for testing purposes only sent a very small quantity suitable for laboratory experiments.

Mr. PENTLAND: How much per head does it cost to dip with oil?

Mr. GORDON: The Black Virginia costs 1s. 8d., and the cotton-seed oil 4d. per head.

Mr. POUND: Might I explain a dip. It is filled with water (about 7 feet), and an inch layer of oil is placed on the top. At one end, where the bullock enters, is a platform with a tip-board. The bullock walks on the tip, and is at once thrown into the dip. The only disadvantage about this method is that sometimes the tipping of the bullock causes him to fall, dragging his hind quarters over the edge of the tip-board, which might result in permanent injury to the animal. To avoid this at some places—Longreach, for instance—the dips instead of having a tip-board, have the slanting entrance which suddenly terminates. This causes the animal to become immediately immersed. As I said before, the oil being on top of the water when the bullock plunges in, it naturally follows that that fluid touches every part of him.

Mr. PENTLAND: What about the second beast that is dipped? Is not the oil displaced by the first in splashing?

Mr. POUND: As the animals keep on being dipped the water and oil is churned up, and the result is that the water becomes filled with globules of oil so that the dipping is still efficacious. After the dipping is finished the globules of oil collect and form a layer on the top of the water as before the dipping commenced. I have seen 350 bullocks efficaciously dipped at the one time by repeatedly adding the oil.

Mr. PENTLAND: I think we should be able to dip more cheaply. If an effective dip can be made of lime, sulphur, and soap, as recommended by Professor Wallace, it would be the very thing that is wanted.

Mr. POUND: I have never tried the sulphur and soap, but I have tried dry sulphur. Mr. Bruce and I did so on some calves, but the ticks simply matured.

Mr. BRUCE: Cooper's dip is very largely advocated. It seems to my mind that nothing but the oil would be effective.

Mr. PENTLAND: The sulphur, as we are all aware, remains a considerable time in the fleece of sheep. This is a great consideration. The oil remains on the hides only a short time, and if the sulphur can be mixed with something so that it would remain in the hide of the beast, it would render the cattle immune from attack when travelling. If the sulphur can be retained in the skin so as to last a longer time, there would be a less liability of infection taking place.

Mr. POUND: In the case of sheep, of course, the condition of the sheep's wool will enable it to retain the sulphur until the sheep is shorn. Cattle will not retain the sulphur for any length of time. Another thing is that cattle are continually shedding the cuticle of the skin, that is to say, "sloughing."

Professor WALLACE: I should say that cotton-seed oils have been proved to be the most efficacious. I got my idea of using soap in dips from the fact that soap is efficacious for destroying insects on trees. I would suggest that the answer to the question should be, "Apollo oil and cotton-seed oil have been found most efficacious in Queensland up to the present time, yet the question requires further research."

Mr. PENTLAND suggested that Professor Wallace's mixture should be included in the answer as a suggestion.

*Prof. Wallace's Mixture.*—25 lb. sulphur to 18 lb. lime boiled in 20 gallons of water for 20 minutes, 2 oz. of soap to be dissolved in every gallon of water, and the solutions mixed in proportions to be determined.

The meeting agreed to the above suggestion.

Mr. BRUCE: Did I not understand Mr. POUND to say he did not think there was any use in using sulphur on cattle?

Mr. POUND: I say try everything possible.

Mr. GORDON said that the Queensland Government had received many suggestions of dips, which on being tested in most cases proved failures.

Mr. Cameron (Government Veterinarian, of Victoria) arrived and took a seat at the table.

Mr. POUND made the following explanation regarding dipping:—

"Dipping is being carried out in Northern Queensland at a time of the year when it is favourable for the cattle and unfavourable for the tick. It would be more satisfactory if dipping were carried out in the summer months. I may mention that it is noticed that cattle after being dipped appear much quieter

\* NOTE.—Prof. Wallace gives this recipe merely as a basis upon which to determine the strength to be applied. This will vary under different conditions.

quieter and healthier than those undipped. The undipped cattle stand for hours in the lagoons, care very little for food, and become emaciated. As to the oil being efficacious in killing the tick, that is proved beyond all doubt. There is a wire in this morning's paper from Ingham, which reads as follows:—

Brisbane, Wednesday.

An Ingham telegram states that there are still a great many cattle dying from ticks throughout the district, but only 1 per cent. of the herds that have been regularly dipped has succumbed.

A Barcaldine telegram states that the district stock inspector reports that the traffic in stock for the south is almost paralysed."

Mr. PENTLAND: After cattle have been dipped the ticks drop off. When they drop off the yards in which they are dipped become infested, naturally. Should not the yards be disinfected at the same time?

Mr. POUND: Mr. Pentland misunderstands my views. If you dip cattle the oil will certainly kill the ticks, although they may drop off. If a single drop of oil touches a tick it kills it.

Mr. VALENTINE: Then you consider the dipping is perfectly efficacious?

Mr. POUND: The dipping is efficacious in destroying every tick on the animal.

Mr. VALENTINE: If you dip a beast, and then take it on to clean country, there would not be the slightest danger of its becoming a source of infection to that country?

Mr. POUND: There would be no danger of infection.

Mr. BRUCE: That is what we want to know.

Mr. BRUCE: Does not the oil spread when it touches the tick?

Mr. POUND: If a drop of oil touches a tick it spreads all over its body by capillary attraction.

Dr. COBB: I see that we must rely to a very great extent upon Mr. Pound, who seems to be the only one present who has properly investigated the tick in Australia. I would like to ask Mr. Pound for a definite statement, not only whether ticks are killed by dipping, but whether he is reasonably sure that no eggs or young can possibly hatch from ticks that are fairly matured and that have dropped from cattle that have been dipped.

Mr.

Mr. POUND in answering this question exhibited specimens of ticks dipped in Apollo and cottonseed oil and a weak solution of the former. The three oils destroyed all vestige of life.

Dr. COBB: I do not think Mr. Pound has quite understood my question. Suppose a beast is to be dipped which is covered with ticks in all stages. Suppose one of these is a gravid female. Now, I would like to hear whether Mr. Pound can say that none of the eggs which exist in this tick can possibly hatch.

Mr. POUND: It must be understood that while a tick is attached to an animal there is no ova.

Mr. PENTLAND: I would like some opinion on another point. If the cattle are dipped, what does Mr. Pound recommend to be done? Should they be removed to clean pasture, or should they be put back on their own pasture?

Mr. POUND: In most cases there is no clean pasture within hundreds of miles from where cattle should be dipped.

Mr. BRUCE: Which are the hardest to kill with the oil, the young tick or the comparatively full-grown tick; which would die first?

Mr. POUND: In either case they are destroyed very readily. In some dipping fluids the young ticks will die quickly and the older ticks are not so readily killed, and in other dipping fluids the order of things is reversed. In the case of oil, however, it effectually destroys all tick-life and ova in twenty-four hours.

Professor WALLACE was of opinion that dipping is more a temporary relief from the inconvenience of animals on which ticks are very abundant than as a preventive of the disease, and is a matter for the stock-owner to consider in his own interests, and should not be made compulsory except in the case of infected or suspected cattle going to travel in clean country.\*

(c) *The best form of Dip.* (d) *The mode of Dipping.*

Dr. COBB: I think we might hasten over (c) and (d) and request Mr. Pound or Mr. Gordon to prepare a report for the Conference to consider and, if thought desirable, adopt.

Mr. POUND: The form of dip that I would propose is about 4 feet wide at the top and 2 ft. 6 in. at the bottom and about 30 feet long and 7 feet deep. Some of the dips are made with perfectly vertical ends with a tip-board as I before described, but I prefer the sloping entrance.

Professor WALLACE: I would suggest that these minor questions be passed over and more attention given to the greater questions to be discussed. The time is very short.

Mr. BRUCE: I do not see how we can depart from the business-sheet.

Mr. PENTLAND: There is one thing that struck me in reference to dipping. I have heard that in some dips the heads of cattle have not been properly dipped. Is that your experience, Mr. Pound?

Mr. POUND: Every dip I have seen has properly immersed the cattle.

Mr. PENTLAND: I am very glad to hear that such is the case. I heard that it was not so.

Dr. COBB: Having withdrawn my vote, I have not the power to make a motion; but if I had I would move that questions (c) and (d) be handed over to the Queensland delegates to submit a statement to-morrow morning. That would save much time. I offer this as a suggestion.

The meeting decided to adopt that course.

(e) *When should Dipping be used by Owners?*

Mr. GORDON: No stock should be allowed to go through suspected districts without being dipped along the road.

Mr. POUND: I have been informed that one station where, although a tick has never been seen, the owner is constantly dipping his cattle. Numbers of other stockowners have erected dips and commenced dipping straight away though their stock has never been troubled with the tick.

Mr. TABART: A stockowner in Tasmania informs me that he dipped 4,000 or 5,000 head of cattle most successfully, but on large stations covering perhaps some hundred square miles of country, I think dipping is most impracticable. I will take an instance of possibly 40,000 head of cattle. Suppose you can

\* This note was made by Professor Wallace during some discussion on the subject of compulsory dipping, but was afterwards withdrawn on the Conference agreeing to the decision given above.

can muster 30,000 head, how are you to get the balance of 10,000 within a reasonable time to complete the operation. It is out of the question to think of mustering the whole herd for the purpose of dipping.

Mr. BRUCE: The owner may have three or four dips.

Mr. POUND: I might say that dipping cannot be carried out in every case. For instance, in the North-western Territory of Queensland, where we often find wild cattle, 2 or 3 years old, which are difficult to muster.

Dr. COBB: Of course we have to keep in mind that we have to make recommendations to the Ministers. We have either to recommend or not to recommend private owners to dip. Then there is another point. We have either to recommend or not to recommend to the Government to compel private owners to dip.

Mr. BRUCE: That comes under the next question.

Mr. POUND: I would recommend that all owners in coastal country be compelled to dip their cattle.

Mr. VALENTINE: We should also recommend how often the dip should be used.

Mr. PENTLAND: It seems to me that dipping is no good, because cattle put on the infested country, after having been dipped, are reinfested. Then you have to dip again; so that you have a stockowner in continual turmoil. I think remedial measures should come under the heading of Inoculation.

Professor WALLACE: Dipping, to my mind, is no good whatever for eradicating the disease. Dipping can only be of value in a country where the ticks are so numerous that they injure the animals. But I think when we have got the tick on a station we should allow it to spread as fully as possible, so as to stop the death of the cattle by red-water. In other words, to check the development of ticks after they have established themselves only delays the time when immunity from the disease may be naturally expected.

Dr. COBB: At 4d. each once in three weeks, it will cost us 5s. a year per animal, to say nothing about the cost of constructing the dip.

Mr. POUND: I would recommend that owners of small lots of cattle on selections should dip their cattle. There is no trouble in mustering cattle on small selections. I would recommend dipping in these cases as an amelioration. One attack of disease does not prevent an animal from suffering from a second acute attack.

Professor WALLACE: Ticked cattle are immune to disease in a tick-infested district; but transport them to clean country, and then take them back again to tick country, and they will take the disease.

The meeting recommended continual dipping in practical country, and added the following opinions on the recommendation of Mr. Pound:—

*When should Dipping be made use of by Owner?*

- (1.) When the first symptoms of the disease are observed in a herd, whatever the size of the run may be, the infected and suspected portion of the herd should be dipped, as in that way the disease may be stopped.
- (2.) When the disease appears in a paddock in which cattle are being fattened, they might be dipped; and, if the disease again appear, dipped again; and in this way they would likely be protected till they are fit for market, although the dippings might throw them back somewhat in condition.
- (3.) Even when the disease had obtained a strong footing in a large herd, if the cattle are running in paddocks and can be mustered, it would be advantageous to dip.
- (4.) In the case of dairy and other small herds, it will always be advantageous to dip.

*Should Dipping be made compulsory?*

The meeting arrived at the following determinations, being the views expressed by Mr. Pound:—

Yes, in such cases as the following:—

- (1.) In the case of cattle in a quarantine area, travelling from an infested run, through suspected, but not declared infected, country to market, the dipping to be on the owner's own run (unless a public dip is near), at his own expense.
- (2.) In the case of cattle travelling from doubtful country into clean country, the expense to be borne as in No. 1.
- (3.) In the case of cattle which have travelled through infected country, the expense to be borne as in No. 1.
- (4.) In the case of cattle which have come into direct or indirect contact with infected or suspected stock, the expense to be borne as in No. 1.

## 15. Whether Hides should be Pit or Dry Salted?

Mr. GORDON said that in the regulations about to be framed in Queensland provision will be made that no hides shall come down from the north unless they have been dry-salted, and a certificate produced from the Inspector that they have been properly salted, and a declaration from the owner that they have been seven days in salt.

Mr. POUND said that experiments had been carried out to see how long salt solutions would take to destroy ticks. It had been suggested to dip infected cattle in sea-water, and he carried out the experiment of placing ticks in sea-water, which contains about 3.5 salt, with the result that they lived twenty hours, and in a saturated solution containing 36 per cent. salt they lived four hours. He had had a lot of experience in watching hides from Rockhampton, Townsville, Alligator Creek, Normanton, Burketown, and other places, with the result that in all hides properly dry-salted the ticks were destroyed in twenty-four hours. The hides, he explained, are salted on the flesh side first—approximately 10 lb. of salt per hide—and they remain in that position for about three days, when they are turned over and resalted, and remain in that position also for three days. No hides were sent away for export until having undergone this process for six or seven days. When it was considered that tick-infested hides have been coming down from the Gulf ports for several years, it was clear indication that the dry-salting process was quite sufficient. Even if hides were indifferently dry-salted, the capillary attraction from one hide to another would cause the salt to penetrate every part.

Professor

Professor WALLACE moved,—“That it is the opinion of this meeting that dry-salting is preferable to brine or pit salting.”

Seconded by Mr. GILRUTH.

Carried.

Mr. PENTLAND said would it not be as well, in giving certificates, to state the quantity of salt as against the weight of the hide. Sufficient might not be used in some cases.

Mr. POUND said that in every case in Queensland salt had always been used in excess.

Mr. GORDON authenticated Mr. Pound's statement.

Mr. POUND pointed out that owing to the additional weight the salt gave the hide it was always to be found that the butchers and meat companies used it to excess.

Mr. PENTLAND moved,—“That dry-salting of hides be accompanied by a certificate from a competent officer that they have been thoroughly and effectively salted for a period of not less than seven days, and a declaration to the same effect from the owner.”

Seconded by Mr. TABART.

Carried.

Professor WALLACE moved,—“That ticked hides should be binned with the hairy side in, and hides free from ticks with the hair outside, and a penalty be inflicted upon anyone who exposes for sale hides not folded according to the above proposals.”

Seconded by Mr. GORDON.

Professor WALLACE said that his first object in proposing this motion was to fall in with the objection raised by many people and prevent the tick dropping from the hides. His second object was to enable the tick-infested hide to be distinguished from the clean hide at once.

The CHAIRMAN thought it would be a help to the Inspector to be able to at once sort out the tick-infested hides, as it was a difficult matter to look over 500 or 600 hides. It would be a great help to him if the tick-infested hides were folded up in a certain manner.

Mr. VALENTINE pointed out that if a man suspected tick in his hides he would not fold them up in a certain way, thus depreciating his property.

Professor Wallace's motion was then put and negatived.

## 16. Licks and Drenches.

Mr. STANLEY: This disease is scarcely known in salt-bush country. I have not the slightest hesitation in saying that the only medicinal remedy that we may look for as being practicable for animals will be in the shape of licks, and in all probability these must be of a saline nature that will make the condition of the animal such that the tick organism will not be able to easily subsist upon its blood.

Mr. POUND: Dr. Hunt and myself have conferred upon this matter, and we thought after the reports we had received from South Africa with regard to the treatment of the disease there that is somewhat similar in nature to this, that it would be well to try experiments with arsenic administered with salt. We know that in Queensland the cattle are passionately fond of salt. It is quite correct that in the salt-bush country the disease is not of the same virulent nature as in the coast country, where the grasses are favourable for the ticks.

Mr. PENTLAND: What conditions are most favourable for the disease?

Mr. POUND: The coast country grasses afford the tick the best protection, and hence the virulence of attack in such districts.

Mr. GILRUTH: Have you found in your experiments that any particular animal showed any more immunity than any other?

Mr. POUND: No; I cannot say that. We have found ticks upon many animals, but the effects of it are not the same as on bovines.

Professor WALLACE: The coast country where grass prevails is the most favourable for ticks, and dense salt-bush country is free from ticks, but I have no faith in salt. One thing has been found most successful in connection with horses in South Africa, and that is sulphur. Carbolic acid has been found useful for the treatment of ticks after they are developed. Arsenic, on the other hand, is likely to be very useful, but extremely dangerous, because some cattle might take the lick too freely. Sulphur, to my mind, is the great enemy of all parasites, and it will be the safest remedy internally. Externally, rubbed along the back, it has been found most efficacious in clearing off the ticks.

Mr. POUND: Mr. Bruce and myself had a cow and a calf under observation. We rubbed that calf well with sulphur, and allowed it to run on an infested place. It soon became infested with ticks, and when we examined the skin we found that they simply revelled in the sulphur as if it were a shower-bath. From my experience, I do not think sulphur does the slightest good.

Mr. GORDON: In my experience, country of a saline, cretaceous nature is altogether unfavourable for ticks.

Mr. POUND: It is not so much a question of cattle eating salt or anything else, so much as the nature of the country and the harbour it affords them that effects the ticks.

It was decided, on the motion of Mr. GORDON, seconded by Professor WALLACE, that the reply to Question 3 should be that experiments with licks and drenches are desirable.

## 17. Risk of Infection.

Mr. GORDON: We have a little island about 3 miles from the coast. There has been no traffic for years with horses or cattle, but the tick are present on that island now. They have been carried over perhaps by blackfellows' dogs or in some way, but we have no evidence as to the manner in which they got there.

Mr. POUND: I have conducted a good many investigations with respect to the way in which ticks are carried from place to place. Briefly put, I found ticks on wallabies, kangaroos, ibis, cranes, and other birds, but always in the larval stage. Although I cannot say definitely that these animals and birds are the actual agents, I think I can safely say that they act as agents of distribution. We have very good evidence that ticks can be carried by agents other than cattle.

Dr.

Dr. COBB: Mr. Chairman and gentlemen,—In speaking to this question I beg to ask your indulgence if I apparently depart from the subject under discussion. The reason I ask your indulgence in this respect is that I have several times during the Conference been summoned away to attend my Minister, and have thus unavoidably missed the discussion of several important topics. Some of the remarks I shall make would have been made earlier if I had had the opportunity.

The outcome of this Committee's work must be one of three things, viz. :—

- 1, It will recommend that the spread of the ticks be delayed as much as practicable; or,
- 2, It will recommend that the tick be allowed to spread unhindered, or even encouraged to spread; or,
- 3, It will make no specific recommendation on this head.

If it makes no recommendation, the action will be construed to mean that the Committee does not know which of the first two courses should be followed, or, in other words, that the Committee does not know its business. I am sure that this latter is not the case; therefore, the matter sifts down to the action the Committee recommends with reference to the spread of the tick.

It has been suggested that the country should be "ticked up" as soon as possible; that is, that the tick should be encouraged, or at least allowed, to spread as far as it will, as fast as possible. This course of action seems to me to be against common sense, and inconsistent with the practice in other diseases. So far as we know, there is no possibility of preventing the spread of this tick into all localities favourable to its growth. All the investigations tend to show that this is so. We have seen that the larval ticks are carried about from place to place by agencies entirely beyond human control. They are blown about by the wind; they are carried from place to place by wild animals and birds. These birds and other agencies pay no attention to human quarantine lines. I repeat, the larval ticks are carried from place to place by agencies beyond human control, and that, therefore, ultimately the tick will spread into every locality suitable to its growth.

Now, what do we do in other cases of a similar nature? Take tuberculosis. This is also a disease carried about by agencies beyond human control. We know that in all probability tuberculosis will spread to every place suitable to its growth. What do we do? We do not say, "Let it spread." We do not say, "Encourage it to spread," in the hope of ultimately getting cattle, &c., that are immune. No; on the contrary, we do everything we can to prevent it. I am indirectly interested in cattle stations now free from tick. When my advice is sought with regard to these stations, I say, "Keep the ticks out; put off the evil day as long as you can." It seems to me this is the course dictated by common sense and consistency. I have absolutely no sympathy with Professor Wallace's suggestion that we should "tick up" the country as soon as possible, or let it "tick up" any faster than we can help. What a monstrous position we should be in, after having encouraged the spread of this tick, if next year a means should be discovered to prevent its spread.

This is the reason why I am most strongly of the opinion that we should recommend that everything practicable should be done to prevent the spread of the cattle tick.

Now, this Committee have affirmed that the cotton-seed oil dip is effective in killing all the ticks on a beast if properly carried out, and for this reason it seems to me inconsistent to talk about recommending the prohibiting of the passage of cattle from infested or suspected areas on to clean country. If the dip is effective, what is the objection to allowing cattle to leave the boundary of infested country to go on to clean country immediately after being properly dipped,—especially when we consider the fact that ticks must constantly be leaving this same infested country on the wings of birds and in the fur of wallaby and kangaroos? Remember that we have evidence that this is a common thing. It seems to me, therefore, that the ultimate outcome of all this discussion will be the conclusion that it is safe and practicable to allow cattle to proceed from infested or suspected country on to clean or suspected country, providing they are properly dipped on the border just before proceeding, and further, providing they are again dipped at a further stage of their journey within the time it takes ticks to mature. I add this latter precaution because I recognise that ticks are bound to accumulate about the dips, especially if the dips are in localities favourable to the growth of the tick; and I may here remark that I hope all the Queensland and New South Wales dips have been erected in such localities. If they have not, it is a radical mistake. The larval ticks having accumulated about the dip, it is possible that some few of these might find a foothold on the dipped cattle. A second dipping within the period these require to mature, and after the cattle had travelled a certain distance, to be regulated by law, would act as a precaution against the spread of the tick through their agency.

It must be borne in mind that suspected country must always in the stock regulations be looked upon as both infested and clean, simply because we do not know which it is. If clean, we do not wish to infest it; if infested, we must not allow cattle to leave it without being dipped.

Of course the moment, no matter how soon, dipped cattle enter either infested country or suspected country, they must by that very fact come again under the dipping regulation, and must not be allowed to leave for either clean or suspected country without dipping.

I think it would be unwise to interfere with the cattle trade to a greater extent than this in light of our present knowledge.

The dipping must, of course, be properly done. This is not difficult or excessively expensive; and, when we consider the efficacy of modern quarantine methods, there can be no doubt that these colonies can provide the machinery for the success of these regulations.

Professor WALLACE: I quite agree with everything that Dr. Cobb says about the probable spreading of the tick, but I entirely disagree with Dr. Cobb about the dips. I think infected cattle should—dips or no dips—be absolutely restricted from leaving infested areas.

Mr. PENTLAND: I contend that although Dr. Cobb is right in certain respects, the gravity of the risk of infection is so great that the most rigid restrictions should be placed upon the removal of cattle from infested areas, or any area that is not absolutely known to be free from ticks.

Mr. POUND: There is really no possibility of cattle, after being properly dipped, picking up ticks again within (say) three weeks at least. There are, I may say, thousands of cattle being dipped in Queensland now. There is one thing I have noticed that might be a cause of ticks spreading. I have found ticks on roley-poley, and it is well known how the tussocks of this grass roll across a paddock before the wind.

Mr. GORDON: Ticks may be carried to other Colonies on the straw used for packing, bananas, &c.  
After

After discussion it was resolved,—“That Queensland observations show that ticks may be spread by any moving or movable object, including domestic and wild animals and birds, these acting as intermediary agents for the conveyance of the larval tick. The extent of the consequent risk cannot be reliably stated at present, but it is probable that it is not very great.”

#### ADDITIONAL QUESTIONS SUBMITTED TO THE COMMITTEE BY THE CONFERENCE.

1. *Are there any instances in which the Tick infest the Cattle without being followed by symptoms of Red-water or the Disease known as Tick Fever?*

Symptoms are always shown in the early or first attack of the tick, namely, fever and red-water. But in chronic cases of tick infection the acute symptoms may not be noticeable, although the micro-organism is always present in the blood. Proposed by Mr. STANLEY, seconded by Mr. POUND. Carried.

2. *The length of time the Tick will live without finding a Host.*

The maximum time known to elapse between the dropping to the ground of a female tick and the subsequent attachment of the progeny to a fresh animal, according to Mr. POUND'S Australian experience, is one year at least, and the minimum time one month. Moved by Mr. GILBERT, seconded by Mr. POUND. Carried.

#### *Length of Time.*

Mr. POUND: Before we received this report from America I may say that ticks were kept alive for seventeen weeks. An argument put forth was—Why should not these ticks subsist upon the egg-shells? We removed the egg-shells, and the ticks had, therefore, nothing at all from which they might obtain nutriment. These ticks in the bottle were put in on the 12th May, and they have, therefore, lived four months. If we take a number of ticks they will live together in a colony, as it were, longer than if they are isolated. It is only when they are in large numbers that they are able to exist without food. Seventeen weeks is the longest I have seen them live. In American reports I have seen it stated that ticks have lived without food for six months. It must not be forgotten that ticks will only exist in this way under what may be termed favourable conditions. We must not overlook the fact that temperature and moisture have something to do with the prolonged existence of larval ticks. My remarks do not, of course, apply to mature ticks.

Mr. PENTLAND: How long will ticks live in pastures?

Mr. POUND: We have conducted experiments by placing ticks in test tubes. Some of the ticks are exposed to sunlight and moisture, while others were kept as controlling tests in a place where the ticks were protected from such influences. We found that they could not stand the sunlight and moisture; they soon succumbed to it.

Mr. GILBERT: I think that in speaking about the tick we must also take into consideration the egg. I think the question we are discussing means how long does it take from the time of the female falling off, the laying of the egg, the incubation, &c., till the time the young tick finds another host?

Mr. POUND: In our answers we must not overlook the fact that there are certain conditions which are favourable to long endurance of tick-life. Now, in the summer time, the egg-laying process will last six or seven days. Three weeks after that the young ticks emerge, and then they will remain alive in bottles for three or four weeks. But, in the case of ticks that are removed from the animal in midwinter, such ticks do not commence laying their eggs until twelve days after being put in the bottle, and, so far as I can see, the process of oviposition will last some months. I have some eggs that were laid last February. They were kept in a cool cellar, and when we take any of those eggs out and place them in a warm temperature they will hatch in a few days; while, in this colder weather, they will take a good deal longer.

Professor WALLACE: The sheep tick can live for nearly twelve months. The Americans found that young ticks will live for four and a half months without blood or other nourishment.

Mr. GILBERT: In the experience of Mr. POUND, the period that may elapse between the tick leaving its host and its progeny finding another host is, under certain circumstances, twelve months.

Mr. POUND detailed certain trials he had conducted, for the purpose of showing how necessary it is to thoroughly salt hides that are taken from an infected beast. In the first case, he noticed that certain small butchers who killed a bullock now and then were rather economical with the salt, and he took a piece of one of these imperfectly-salted hides, which he kept under close examination. This was on the 21st May, and on the 12th June the ticks were still alive. He reported this matter to his Government, so that a caution could be published in the papers. In the second case a piece of unsalted hide covered with ticks was taken. In a few days it became decomposed, but soon, in the hot, dry weather, it dried up. On the fifteenth day he removed some ticks, and again on the twenty-second day. Strange to say, four days after the removal of each of these series of the ticks, they commenced to lay their eggs. He thought these experiments proved conclusively that imperfectly-salted hides can act as a vehicle for the transmission of ticks.

Mr. PENTLAND: The time which a tick will live on an untreated hide will be from five to twenty days.

This was submitted as a reply to Question 3.

3. *How long will the Tick live on the untreated Hide?*

Proposed by Mr. PENTLAND, and seconded by Mr. STANLEY,—“From a series of carefully-conducted experiments by Mr. POUND, it has been proved that the tick will live on untreated hides from five to twenty days.”

Answer:—Yes.

#### *Licks and Drenches.*

After discussion, Mr. GORDON moved, and Professor WALLACE seconded,—“That experiments with licks and drenches are desirable.”

Motion carried.

### INOCULATION.

Mr. POUND said that Dr. HUNT had carried on a series of carefully-conducted experiments, with a view of ascertaining whether by some method of inoculation cattle could be protected from tick fever. Seven inoculated animals with an equal number of controlled or healthy animals were placed in a tick infested district. After five or six weeks they were covered with ticks, and one of the controlled or uninoculated animals died, which looked very promising; but within another week one of the inoculated animals died. Consequently, after waiting several months, we can only say that our observations in this direction are not altogether unsatisfactory, but very inconclusive. It has frequently been stated that inoculation with pleuro virus will prevent cattle from suffering from tick fever. A certain station within the tick-infested district in the Gulf country inoculated some 2,000 bullocks, and then travelled them through tick country to the south. It was pointed out by the owners that the very small death-rate was due to the fact that the cattle were inoculated with pleuro virus. I maintain that we cannot draw any conclusions from these observations, inasmuch as there were no controlled animals. What should have been done was to have inoculated half the mob, and allowed them to travel with the uninoculated precisely under the same conditions, then we should be in possession of some reliable information bearing on this question.

On the motion of Mr. STANLEY it was decided that no satisfactory experiments in inoculation have been made, and the information forthcoming concerning the disease is that an animal enjoys no certain immunity from a previous attack.

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### DEPUTATION.

During the forenoon a deputation, consisting of gentlemen representing the tanning industry waited upon the Expert Committee to explain their views with regard to the treatment of hides for export. They stated that the tanners are unanimously in favour of dry-salting in preference to pit-salting, as the latter, on account of the moisture it contained, not only damaged the hides but greatly deteriorated the value of the leather.

A suggestion, by Professor WALLACE, that ticked hides should be "bibled" wrong side out, and clean hides *vice-versa*, and that a penalty be imposed on shippers who did not observe such regulations, was received by the deputation with approval.

The Chairman, on behalf of the Committee, thanked the deputation for the information given.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

LEPROSY IN NEW SOUTH WALES.

(REPORT ON, FOR THE YEAR 1895.)

*Printed under No. 26 Report from Printing Committee, 11 November, 1896.*

The Secretary to the Board of Health to The Under Secretary for Finance and Trade.

Sir, Board of Health Office, 127, Macquarie-street, Sydney, 30 September, 1896.

I have the honor, by direction of the Board of Health, to forward you herewith a report on Leprosy in New South Wales for the year 1895, and to suggest that it should be laid before the Houses of Parliament.

I have, &c.,

CLARENCE A. SIMMS,

Secretary.

On 1st January, 1895, forty persons remained under detention at the lazaret. [See *Appendix A.*]

During the year ten persons were reported to the Board under the Leprosy Act, 1890, as being suspected lepers. Three of them were eventually admitted to the lazaret under warrants which were issued by the Board after careful investigation.

Five patients died during the year—one was a native of India, one of New Caledonia, one of China, one was a native of Ireland, and one was a native of New Zealand of European descent.

One patient was discharged in accordance with the powers granted to the Board under subsection 2 of section 4 of the Act. He had been admitted in 1888 at the age of 14, and from the time he fell under observation his symptoms steadily receded until, as far back as two or three years ago, little remained but some deformities. These were evidence not of active disease, but of disease which had existed and which had caused mutilations during the bygone term of its activity. In view of his apparent recovery his relatives had for some time back made repeated applications for his release. These the Board felt unable to grant until they had satisfied themselves, both by lapse of time and repeated examinations, that no danger to the public health could result. This conclusion being at last warranted in their opinion, and the patient's relatives having shown to the satisfaction of the Board that they were able to and would suitably provide for his care and keep, the Board authorised his discharge.

Thus the number remaining in the lazaret on 31st December, 1895, was 37 persons; 16 of them were whites, of whom 4 were females; the remaining 21 were members of various coloured races.

In Appendix B appears a complete statement of the sex, nationality, occupation, age at and date of admission, residence, and date of decease of all persons admitted to the lazaret from the beginning. The Roman numerals have reference to further details given in Appendix C, which is mentioned again below.

From the Appendices named it will be seen that the total number of persons admitted since 1883, when patients first began to be received (though the notification of leprosy and the detention of lepers were first provided for by law only at the end of 1890), is 58. Distributed under nationalities the account stands as follows:—Natives of New South Wales, 15, of whom 4 have died and 1 has been released; of Queensland, 1; of England, 2; of Ireland, 2, of whom 1 has died; of New Zealand, 1, deceased; of Fiji, 1; of Germany, 1; and all these were whites of European descent. There were also 29 natives of China, of whom 11 have died; of India, 2, of whom 1 has died; of the West Indies, 1, discharged in 1885; of Java, 1; of the New Hebrides (Tanna), 1; of New Caledonia, 1, deceased; and all of these were coloured people.

In the third Appendix (C) are given, as usual, aetiological notes of the cases of new patients received during the year. To these are now added for the first time histo-pathological notes and some photo-micrographs. Its contents have great interest in relation to many important questions concerning this disease which still remain incompletely answered; but, as they are strictly technical in character they are not attached hereto, and, as before, will be issued only to medical men specially interested in the subject and to the libraries of learned societies.

Every opportunity has been given to members of the medical profession to visit the lazaret for the purpose of seeing such patients as were formerly under their care, and for study of the disease.

The following statements show the total expenditure for the year 1895 and the source from which the moneys have been paid :—

STATEMENT of the total Expenditure of the Leper Lazaret (male and female) at Little Bay during the year 1895, showing from what sources the amounts have been paid :—

EXPENDITURE.			HOW PAID.		
	£	s. d.		£	s. d.
To working expenses, as per attached statement	2,824	4 11	From vote for the maintenance of Lepers by the Board of Health	2,067	18 5
„ cost of alterations to coal-shed	66	14 0	From vote for stores by the Controller-General of Stores	441	16 1
„ erection of bedroom for Chinese	39	5 0	From votes under control of Government Architect	264	4 7
„ erection of microphones	23	10 0	From vote of the Coast Hospital by services and stores transferred	329	2 10
„ fees for medical examination of lepers, proved and suspected	25	4 0			
„ painting buildings	124	4 0			
<b>Total</b>	<b>£3,103</b>	<b>1 11</b>	<b>Total</b>	<b>£3,103</b>	<b>1 11</b>

STATEMENT showing the Working Expenses of the Leper Lazaret (male and female) at Little Bay for the year 1895 :—

	£	s. d.
Salaries	701	17 2
Provisions	1,112	13 1
Fuel	146	9 0
Drugs, disinfectants, &c.	286	17 11
Fruit	69	10 6
Tobacco, cigars	72	0 0
Drapery, bedding, uniforms, &c.	157	16 8
Furniture, ironmongery, brush, glass, and crockery wares	87	19 11
Books, papers, &c.	2	7 9
Material for repairs	35	18 11
Wines, beer, and spirits	100	19 10
Sundries	49	14 2
<b>Total</b>	<b>*£2,824</b>	<b>4 11</b>

\* Being equal to an average of 272 Os. 11d. per inmate per annum.

It has been the earnest endeavour of the Board of Health to mitigate the sufferings of these unfortunate patients. Their wants have been carefully attended to by an experienced wardman in charge, and by attendants and nurses, under direct supervision of the Medical Superintendent and Matron of the Coast Hospital.

Sydney, 7th November, 1896.

J. ASHBURTON THOMPSON,  
President.

## APPENDIX.

(A.)

RETURN showing number of persons found to be suffering from Leprosy and removed to Little Bay, New South Wales; also Deaths and Discharges for each year since 1883.

	N.S.W.	New Zealand.	English.	Chinese.	Javanese.	West Indian.	South Sea Islanders.	Indian.	German.	Queenslander.	Total.
<b>1883.</b>											
Admitted during the year	...	...	...	5	...	...	...	...	...	...	5
Died do	...	...	...	...	...	...	...	...	...	...	...
<b>1884.</b>											
Remaining in on January 1	...	...	...	5	...	...	...	...	...	...	5
Admitted during the year	...	...	...	2	...	...	...	...	...	...	2
Died do	...	...	...	...	...	...	...	...	...	...	...
<b>1885.</b>											
Remaining in on January 1	...	...	...	7	...	...	...	...	...	...	7
Admitted during the year	...	...	...	1	...	1	...	...	...	...	2
Died do	...	...	...	1	...	1*	...	...	...	...	2
<b>1886.</b>											
Remaining in on January 1	...	...	...	7	...	...	...	...	...	...	7
Admitted during the year	...	...	...	2	1	...	...	...	...	...	3
Died do	...	...	...	4	...	...	...	...	...	...	4
<b>1887.</b>											
Remaining in on January 1	...	...	...	5	1	...	...	...	...	...	6
Admitted during the year	...	...	...	1	...	...	...	...	...	...	1
Died do	...	...	...	...	...	...	...	...	...	...	...
<b>1888.</b>											
Remaining in on January 1	...	...	...	6	1	...	...	...	...	...	7
Admitted during the year	1	...	...	3	...	...	...	...	...	...	4
Died do	...	...	...	...	...	...	...	...	...	...	...
<b>1889.</b>											
Remaining in on January 1	1	...	...	9	1	...	...	...	...	...	11
Admitted during the year	1	...	...	1	...	...	...	...	...	...	2
Died do	...	...	...	...	...	...	...	...	...	...	...
<b>1890.</b>											
Remaining in on January 1	2	...	...	10	1	...	...	...	...	...	13
Admitted during the year	2	...	...	...	...	...	...	...	...	...	2
Died do	...	...	...	2	...	...	...	...	...	...	2
<b>1891.</b>											
Remaining in on January 1	4	...	...	8	1	...	...	...	...	...	13
Admitted during the year	5†	...	...	4	...	...	1‡	...	...	...	10
Died do	1	...	...	1	...	...	...	...	...	...	2
<b>1892.</b>											
Remaining in on January 1	8	...	...	11	1	...	1	...	...	...	21
Admitted during the year	2	...	1	8	...	...	1§	...	...	...	12
Died do	2	...	...	1	...	...	...	...	...	...	3
<b>1893.</b>											
Remaining in on January 1	8	...	1	18	1	...	2	...	...	...	30
Admitted during the year	3	1	...	2	...	...	...	1	...	...	7
Died do	...	...	...	1	...	...	...	...	...	...	1
<b>1894.</b>											
Remaining in on January 1	11	1	1	19	1	...	2	1	...	...	36
Admitted during the year	1	...	...	...	...	...	1	1	1	1	5
Died do	1	...	...	...	...	...	...	...	...	...	1
<b>1895.</b>											
Remaining in on January 1	11	1	1	19	1	...	3	2	1	1	40
Admitted during the year	...	...	3	...	...	...	...	...	...	...	3
Died do	...	1	1	1	...	...	1	1	...	...	5
Discharged	1	...	...	...	...	...	...	...	...	...	1
Remaining in on January 1, 1896	10¶	...	3	18	1	...	2	1	1	1¶	37

\* One West Indian discharged on the 29th December, 1885, his sores having healed and there being no law warranting his detention.  
† One patient, I.L., reported 18th December, 1891, was removed to Little Bay on 12th January, 1892.  
‡ Native of Tauna. § Native of Fiji, of European descent. ¶ Of European descent.

SUMMARY

## SUMMARY of cases since 1883.

	N.S.W.	New Zealand.	English.	Chinese.	Javanese.	West Indian.	South Sea Islanders.	Indian.	German.	Queenslander.	Total.
Total admitted since 1883 .....	15	1	4	29	1	1	3	2	1	1	58
Total died since 1883 .....	4	1	1	11	...	1*	1	1	...	...	19
Total discharged since 1883 .....	1	...	...	...	...	...	...	...	...	...	2
Remaining in on January 1, 1896 .....	10	...	3	18	1	...	2	1	1	1	37

\* Discharged, 29th December, 1885. (See previous note.)

## (B.)

## RETURN of Particulars of Lepers detained at Little Bay, New South Wales, since the year 1883.

Name.	Sex.	Nationality.	Occupation.	Admission.		Where from.	No. of Case in Clinical Notes.	Died.
				Age on.	Date of.			
A.H.	Male	Chinese	Gardener	42	19 April, 1883	Parramatta Asylum	.....	15 May, 1886.
J.H.	do	do	do	32	19 " "	do	.....	27 June, "
A.H.	do	do	do	34	12 June, "	do	.....	20 April, "
A.M.	do	do	Butcher	32	28 Oct., "	Tenterfield	XIV	
A.P.	do	do	Storekeeper	27	28 " "	Willow Creek	XV	
G.H.	do	do	Labourer	37	27 Oct., 1884	Sydney	.....	\$24 Dec., "
K.K.	do	do	do	24	21 Dec., "	Bathurst	.....	28 April, 1885.
J.B.	do	West Indian	do	51	22 Sept., 1885	Bermagui	.....	6 Feb., 1890.
A.Y.	do	Chinese	Gardener	29	23 Dec., "	Sydney	.....	
C.B.	do	do	do	32	29 Jan., 1886	Alexandria	XVI	
A.S.	do	do	Tin-miner	42	20 Feb., "	Cooper's Creek	.....	12 Nov., "
C.T.	do	Javanese	Groom	24	14 Aug., "	Castle Hill, Parramatta	XVII	
A.L.	do	Chinese	Gardener	44	20 May, 1887	Bathurst	.....	12 April, 1891.
Y.S.	do	do	Carpenter	31	20 April, 1888	Sydney	XVIII	
*F.G.	do	N.S.W.	Pinsterer	27	21 Aug., "	do	I	25 Sept., 1892.
A.Y.	do	Chinese	Gardener	29	30 Sept., "	Inverell	XIX	
L.P.	do	do	Carpenter	18	22 Dec., "	Sydney	XX	
H.K.	do	do	Miner	28	23 Mar., 1889	Enfield	XXI	
*H.B.	do	N.S.W.	do	17	17 Dec., "	Mudgee	II	13 May, 1894.
*H.R.	do	do	Labourer	23	8 Aug., 1890	Richmond River	III	
*A.G.	do	do	Schoolboy	14	18 " "	Balmain	IV	
*E.U.	do	do	Labourer	23	16 Jan., 1891	Sydney	V	
*H.S.	do	do	Mariner	41	23 " "	Newtown	VI	
A.L.	do	Chinese	Gardener	30	26 Feb., "	Newcastle	XXIII	28 Dec., 1895.
*M.R.	Female	N.S.W.	Domestic duties	33	11 Mar., "	Surry Hills	VII	20 June, 1892.
T.W.	Male	Chinese	Cook	29	6 Aug., "	Narrandera	XXV	
W.C.	do	do	Labourer	40	27 " "	Sydney	XXIV	
A.H.	do	do	Storekeeper	25	18 Sept., "	Mudgee	XXU	
J.L.	do	S.S. Islander	Labourer	25	8 Dec., "	Clarence River	XXVI	
*R.W.	do	N.S.W.	Carpenter	47	24 " "	Narrabri	VIII	
*I.L.	Female	do	Domestic duties	53	18 " "	Waverley	IX	
A.S.	Male	Chinese	Cabinet-maker	28	21 April, 1892	Sydney	XXVII	29 June, 1892.
*C.D.	do	N.S.W.	Carpenter	24	30 " "	Gunnedah	X	
S.P.	do	English	Commercial Traveller	49	7 June, "	Sydney	XI	
H.G.	do	Chinese	Wood-cutter	47	19 Sept., "	do	XXVIII	
*M.E.K.	Female	N.S.W.	Domestic duties	43	21 " "	North Sydney	XII	
L.P.H.	Male	Chinese	Gardener	44	12 Oct., "	Manly	XXX	
W.W.	do	Fijian	Schoolboy	13	27 " "	Sydney	XIII	
A.L.	do	Chinese	Gardener	35	3 Nov., "	Hombala	XXXI	
A.Q.	do	do	Dealer	39	15 " "	do	XXXII	
J.C.	do	do	do	38	29 " "	Sydney	XXXIII	2 Aug., 1893.
A.G.	do	do	Labourer	26	7 Dec., "	Parramatta	XXX	
G.Y.	do	do	Cook	68	31 " "	Sydney	XXXIV	
A.P.	do	do	Hawker	33	21 Jan., 1893	Parramatta	XXXV	
†M.M.	Female	New Zealander	do	24	27 Feb., "	Fiji	XXXVI	10 Sept., 1895.
A.T.	Male	Chinese	Bushman	28	15 April, "	Cooma	XXXVII	
*N.G.	do	N.S.W.	Miner	61	21 " "	Parramatta Asylum	XXXVIII	
*A.M.	Female	do	Housewife	35	7 Sept., "	Balmain	XXXIX	
F.M.	Male	Indian	Hawker	47	3 Nov., "	Newcastle	XL	
*E.R.	Female	N.S.W.	Domestic duties	16	18 " "	West Maitland	XLI	
C.H.M.	Male	German	Station Overseer	65	25 Jan., 1894	Sydney	XLII	
†W.H.D.	do	Queensland	do	21	18 April, "	do	XLIII	
G.N.	do	New Caledonia	Pearl-diver	20	16 July, "	do	XLIV	1 Sept., 1895.
*H.J.T.	do	N.S.W.	Bushman	52	10 Oct., "	do	XLV	
K.F.	do	Indian	Hawker	30	30 Nov., "	do	XLVI	2 Aug., "
J.T.	do	English	Labourer	70	4 April, 1895	Coast Hospital	XLVII	
T.O.R.	do	Irish	do	70	2 Oct., "	Sydney	LU	8 Nov., "
W.F.	do	Irish	Clerk	40	8 " "	do	LII	

\* These are all natives of New South Wales, of European descent. † Date of report. These patients were afterwards removed to Little Bay. ‡ Of European descent. § This patient was transferred to a Hospital for the Insane on 2nd April, 1885, where also his death occurred. ¶ This patient was discharged on the 29th December, 1885 (see note \* to Appendix A). Notes. (a) The only additional cases of leprosy in New South Wales which have been reported to the Board of Health are P.S., et. 33, died in the Richmond River District in March, 1887, and G.R., et. 28, whose death, certified by his medical attendants, was reported by the City Coroner on the 18th July, 1889. Both of these persons were of European parentage. (b) On comparison with the reports for previous years differences in ages or dates of admission of some coloured patients will be observed. Those now given are the correct ages and dates.

1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

DR. TAYLOR, SUPERINTENDENT, LITTLE BAY  
LAZARETTE.

(RETURN RESPECTING.)

*Printed under No. 11 Report from Printing Committee, 30 July, 1896.*

RETURN to an *Order* made by the Honorable the Legislative Assembly of New South Wales, dated 1st July, 1896, That there be laid upon the Table of this House,—

“Copies of all correspondence between Dr. Taylor, Superintendent, Little Bay Lazarette, and Dr. Anderson Stuart, President of the Board of Health, in reference to the censure passed by the latter upon the former for alleged failure to report a case of leprosy.”

(*Mr. O'Reilly.*)

No. 1.

Memorandum from The President, Board of Health.

Board of Health Offices, 127, Macquarie-street, Sydney, 16 May, 1896.

THE following memorandum refers to charges brought against the Board's administration of the Leprosy Act in the columns of Sydney newspapers. The articles in question are attached hereto. (*Enclosure No. 20.*)

The Board has good reason to believe that some, at least, of the statements on which these articles are founded were furnished by Mr. George Henry Taylor, the Medical Superintendent of the Coast Hospital, and in charge of the Lazarette at Little Bay.

For a public officer to make information acquired in his official capacity the basis of an attack upon his superiors is obviously improper, and contrary to Article 74 of the Public Service Regulations.

The principal statements reflecting upon the Board's administration are to the effect that there are at present confined in the Lazarette two patients whom the Medical Superintendent considers ought to be at large. These statements manifestly refer to the cases of H.J.T. (a white man) and G.Y. (a Chinaman).

H.J.T., aged 52, was admitted on the 10th October, 1894, on certificates signed by Drs. Ashburton Thompson and W. H. Goode. While in the hospital his disease appears to have been on the whole stationary, although showing slight signs of advance in some respects, and it appeared to the Board, on the recommendation of its officers, that in this case it would not be unreasonable to consider the propriety of allowing H.J.T. to leave the hospital and return to his family. This question was carefully considered by the Board at several meetings held in June, July, and August, 1895. Inquiries were made through the police and through private persons as to the prospects of his being able to live in comfort if discharged from the Lazarette, and the officers of the Board had many interviews with members of his family on the same subject. As a result, it was found that the circumstances of his family entirely prevented them from maintaining the patient, and his physical health would certainly prevent him from maintaining them, if detained in any place which might in accordance with law be proclaimed as a private lazarette. It was further reported to the Board that the mere rumour in the district where they lived of their father being a leper was sufficient to lead to the exclusion of the members of his family from such employment as had hitherto been open to them. As a consequence, the Board made representations to the Chief Secretary, with the result that an allowance has been made by the Government to his family for their support. There can be little doubt that, under the circumstances, the Board came to the correct conclusion when it decided that, both in the interests of himself and his family, it was best for this man that he should remain in the Lazarette.

It

275—A

[605 copies—Approximate Cost of Printing (labour and material), £23 1s. 0d.]

It may be observed in passing that Mr. Taylor was acting as Medical Superintendent of the Coast Hospital at the date that H.J.T. was admitted, but he does not seem then to have reported to the Board his difference of opinion from the certifying gentlemen. Yet on the 7th February, 1896, he made this statement:—

The man T. is married and has eight children. He enjoys robust health, and although he has certain symptoms of nerve leprosy, I emphatically state that they are not sufficient to warrant his detention in the Lazarette, nor were they sufficient to warrant his being certified as suffering from leprosy. (*Enclosure No. 15.*)

Dr. Ashburton Thompson, on the 21st June, 1895, says as follows (*Enclosure No. 9*):—

On the whole, it will be seen that there is no change in T.'s condition from that described at first and subsequently.

Further, on the 5th March, 1896, Dr. Ashburton Thompson re-examined the patient, and next day he reports as follows (*Enclosure No. 10*):—

The general outcome of the above notes shows that H.J.T. remains in the state described last June, and there has been the improvement in general health usually (or often) observed in lepers after admission under regular dieting and treatment. Some improvement in minor local respects, such as is common in a disease whose manifestations are subject to fluctuations; and advance in the trophic affection of the right hand, as well as increased (or at all events now manifest) wasting of the muscles of the left. Lastly, and merely for the sake of form, I reaffirm the opinion originally expressed by me on 5th October, 1894.

For reasons which will appear in dealing with the case of G.Y., the Board felt bound to be guided more by the opinion of Dr. Thompson and of Dr. Goode than by that of Mr. Taylor.

The second case is that of G.Y., who was admitted on the 31st of December, 1892. This patient is a Chinaman, apparently of advanced age, and stone deaf. When admitted he presented signs of leprosy, which justified the medical officers employed by the Board (Drs. Thompson and Goode) in signing certificates for him. Since that date the disease appears to have been, on the whole, quiescent, although some signs of the disease have become more marked.

If this man were able to support himself, or if his friends were able to support him, there can be no doubt that it would not be unreasonable to permit him to avail himself of the provisions of the Act by leaving the Lazarette and living the remainder of his days in a suitable isolation, if such could be provided for him. But he is a Chinaman, feeble and bent, absolutely deaf, and unable to earn his livelihood. He has no known relatives in the Colony, and there is no one who could be called upon to support him. It therefore seemed to the Board that, taking all the circumstances into consideration, the ordinary dictates of humanity would be more consulted in the case of G.Y. by retaining him in the Leper Hospital than by turning him adrift as a helpless pauper.

It is true that Mr. Taylor, in his paper of 7th February, 1896 (*Enclosure No. 15*), referring to the case of G.Y. (*alias* A.G.), makes the statement that the man, in his opinion, is not a leper. Mr. G. H. Taylor was on one side, and Dr. Thompson and Dr. Goode on the other. For Dr. Thompson certified to his being a leper in December, 1892, and on the 6th March, 1896, he says as follows:—"For the sake of form merely I reaffirm the opinion expressed by me several years ago." It is clear, therefore, that Dr. Thompson and Dr. Goode were of opinion in 1892 that G.Y. was a leper, and that in March, 1896, Dr. Thompson was of the same opinion.

It therefore became the duty of the Board to decide which view it should accept, and it (as it believes most reasonably) decided to give the preference to the opinion of Drs. Ashburton Thompson and Goode, for the following reasons:—

Dr. Ashburton Thompson has been the Principal Medical Officer of the Board of Health for more than ten years. He is a man of the highest professional qualifications in public health. He has been in every case referred to him found worthy of confidence by the Board. Moreover, he has devoted a special amount of attention to the study of leprosy. He has studied it in Norway, he is now engaged in similar investigations in Honolulu, and he has written a number of valuable papers on the subject, for one of which he last year received a special prize from the Leprosy Investigation Committee of London. Dr. W. H. Goode, the other certifying officer, is a gentleman of great professional experience, acquired in various parts of the world. He is a prominent professional man, he has been employed by the Board in a large number of cases as the representative of the medical profession, independent of official duties, and he has been for about nine years Lecturer on Public Health in the University of Sydney.

It did not seem to the Board that Mr. Taylor's claims to its confidence were equally strong. By his own admission (7th February, 1896—*Enclosure No. 15*) his experience of leprosy was but small when he became Medical Officer to the Coast Hospital, on the 9th June, 1894 (less than two years ago). Nevertheless, Mr. Taylor is so satisfied with the progress he has made in the knowledge of this disease since he became Medical Officer to the Coast Hospital that he ventures to make the following statement (7th February, 1896—*Enclosure No. 15*):—"I consider that if I am unable to give a definite diagnosis neither Dr. Goode nor Dr. Thompson could do so." This, of course, is a matter of opinion, but the facts within the knowledge of the Board do not justify its members in concurring with Mr. Taylor. As an example may be brought forward the case of T.O'R. This was a person who died in the Coast Hospital on 9th November, 1895. On the previous day Mr. Taylor reported of this man (*Enclosure No. 1*), "T.O'R. is dying here from pleurisy. He has an obscure nerve disease which may possibly be leprosy in its nature."

In consequence of further communications which took place Mr. Taylor took occasion to say (7th February, 1896—*Enclosure No. 15*), referring to the same person, "I was exceedingly proud of my case, which I consider to be the earliest one of tubercular leprosy ever detected."

In accordance with the Board's practice in such cases, it was directed that a careful examination should be made of those organs and tissues which had been removed from the body of T.O'R. by Mr. Taylor at the *post-mortem* examination. This duty was entrusted, as usual, to Dr. Tidwell, the medical officer in charge of the Biological Laboratory, and the results appear to be sufficiently remarkable. This will appear from the following extract from Dr. Tidwell's report (*Enclosure No. 21*):—

It will be observed that the leprosy bacilli were found in every tissue examined. Since these comprise the skin, nerves, spleen, and testis, it is safe to assume that they were distributed throughout the whole of the body, and that incalculable numbers were present. The extensive fibrous changes observed in the nerves, and especially in the testis, show that the disease had existed for a considerable time. The enormous number of bacilli, their wide distribution, and the extensive pathological changes produced by them, warrant the conclusion that this patient was fairly riddled with leprosy.

As to the accuracy of these statements of Dr. Tidswell there can be no mistake, for, as usual, he took a series of microphotographs of sections of all the important organs observed. These figures are appended to his report (*Enclosure No. 4*).

T. O'R. was an inmate of the Coast Hospital from the 31st of May to the 1st July, 1895, and from the 3rd October in the same year to the 9th November, on which day he died. From the 19th October to the day of his death he was under the special observation of Mr. Taylor (*Enclosure No. 15*).

Mr. Taylor was only able, on the 8th November, to report that he had "an obscure case of nervous disease which may possibly be leprosy in its nature." It appears also from his paper of the 7th February (*Enclosure No. 15*) that on or about the 19th October he was able to discover certain symptoms which, although vague, appeared to point to leprosy. He, however, "carefully examined him from day to day" without being able to come to any definite conclusion until the evening of the day before the man died, when, by the discovery of the bacillus, he satisfied himself that the patient was a leper.

It appears to the Board that it was reasonable to expect that, seeing that Mr. Taylor began to suspect T.O'R. of being a leper on the 19th October, he ought either to have been able to satisfy himself within a reasonable time as to the accuracy or otherwise of his suspicions, or, on the other hand, to have applied for such further assistance as would have enabled him to come to a definite result. The Board has never failed to furnish Mr. Taylor with any further assistance he might require.

On 20th January, 1896, Mr. Taylor published a paper in the *Australasian Medical Gazette*, in which he claimed to have made pathological discoveries in leprosy which would revolutionise the ideas commonly entertained by the profession as to this disease. In view of the importance of the statements made, the Board requested Mr. Taylor to favour its officers with an opportunity of inspecting some of the preparations upon which he founded his conclusions. Mr. Taylor replied (*Enclosure No. 23*) that he had not thought proper to preserve these valuable specimens, but had washed the slides after examining them, and so destroyed the evidence upon which he founded his conclusions. It cannot be said that this answer tended to increase the confidence of the Board in the value of Mr. Taylor's observations.

The Board regrets to draw attention to these actions of Mr. Taylor. From the records, also, it will be seen that in other respects the Board has not been satisfied with this gentleman's conduct. An example of this may be seen by referring to the attached reports of Drs. Thompson and Tidswell, dated the 28th and 29th January respectively (*Enclosure No. 16*).

The Board feels also bound to mention that for this and other reasons it became the duty of the Medical Adviser to censure Mr. Taylor in accordance with the terms of a resolution of the Board, and that on Mr. Taylor's appealing from this decision to the Minister the Minister confirmed the action of the Medical Adviser.

The other points contained in the strictures of the newspapers do not seem to refer specifically to the Board's administration, but rather to take the form of a criticism of the existing law. The Board can have no possible objection to the appointment of official visitors as in lunacy, if the Government think it advisable: but the Board does not see that at present any necessity has arisen for such appointments, and as it has always desired to conduct the medical establishments with as great regard to economy as possible, the Board has not felt it necessary to make such recommendations. If, however, the Government think that the public confidence can in any way be increased by the appointment of additional inspecting officers, it is not for the Board to raise any objection.

One statement in the newspaper is to the following effect:—"The medical officers by whose advice the Board of Health acts in these matters, however, take a different view from that taken by Mr. Taylor, they certifying that both of the men whose leprosy the Superintendent questioned were suffering from the disease in a contagious form. (*Daily Telegraph, 8th May, Enclosure No. 20.*) Careful investigation has been made, but this statement cannot be traced to any responsible officer of the Board. It certainly should not be taken as expressing the opinion of the Board of Health.

A. STUART, M.D.,  
President.

I hereby certify that this is the memorandum adopted by the Board of Health at a duly constituted meeting held on the 12th day of May, 1896.

C. A. SIMMS,  
Acting Secretary.

#### No. 1A.

The Medical Superintendent, Coast Hospital, Little Bay, to The Medical Adviser to the Government.

Coast Hospital, Little Bay, 8 November, 1895.

TIMOTHY O'ROURKE, *æt.* 70 years, is dying here from pleurisy, &c. He has an obscure nerve disease which may possibly be leprosy in its nature.

Dr. TAYLOR,  
Medical Superintendent.

Urgent. Dr. Thompson and Dr. Tidswell.—A.S., 8/11/95. Dr. Taylor,—Please report when this patient is dead.—C.A.S., 8/11/95. O'Rourke died 8:50 Saturday morning. Portions of various organs forwarded to Board of Health.—G. H. TAYLOR, 11/11/95.

Memo. from The Board of Health to Dr. A. Thompson.

Sir,

Timothy O'Rourke died this morning seven minutes to 9 o'clock. Am directed by the President to inform you and Dr. Tidswell. Have informed the latter, who would like to know whether you are going out to C.H., and when. President directed *post-mortem* to be delayed till to-morrow.

I have, &c.,  
H. HUNTER.

From C.H. to Professor Stuart.—Timothy O'Rourke died seven minutes to 9 o'clock this morning.

Sir,

Sir, Board of Health Offices, 127, Macquarie-street, Sydney, 13 November, 1895.

I have the honor to inform you that I have examined sinear preparations of the specimens of spleen of Timothy O'Rourke, forwarded by Dr. Taylor from the Coast Hospital.

Stained by the Ziehl-Neelson method, the specimens show numerous bacilli retaining the fuchsine stain after the acid treatment. They are hence either leprosy or tubercle bacilli. It is very difficult to distinguish between the two by microscopical examination alone. In this case, however, the bacilli are contained for the most part in cells, either entirely filling the cells, or occurring in them in groups. The cells have the character of the "Lapra cells" of Virchow. Further, the bacilli are extremely numerous, but there is no sign of caseation. From these appearances there can be no reasonable doubt that the bacilli in question are bacilli lepræ.

I have, &c.,  
FRANK TIDSWELL.

The Acting Secretary, Board of Health, to G. H. Taylor, Esq., J.R.C.P., Ed., L.R.C.S., Ed.,  
Coast Hospital, Little Bay.

Sir, Board of Health Offices, 127, Macquarie-street, Sydney, 20 November, 1895.

I am directed by the President of the Board of Health to say that, as it appears from your report of the 18th instant that the diagnosis of leprosy was duly established in the case of Timothy O'Rourke, it is necessary that you should explain why you failed to comply with the provisions of section 3 of the Leprosy Act of 1890 (54 Victoria No. 20).

I have, &c.,  
C. A. SIMMS,  
Acting Secretary.

The Superintendent, Coast Hospital, Little Bay, to The President, Board of Health.

Sir, Coast Hospital, Little Bay, 22 November, 1895.

I have the honor to report to you that the case of Timothy O'Rourke was recorded by me with great difficulty. The old man regarded my frequent examinations as a joke, and his answers were generally unreliable. Although I suspected the case to be one of leprosy, I did not feel myself justified in reporting it to the Board of Health until the evidence was complete and conclusive. This, to my mind, it never was until I found the bacillus in the infiltrated condition of the eyebrows. I did not at first attach much significance. It was after I had carefully worked out the details of the case that the possible importance of this condition occurred to me. When I reported the case to the Board of Health the man, in my opinion, was certain to die within a few days and I stated in my message that he had an obscure nerve disease, possibly leprosy in its nature. At that time I had prepared specimens of serum from the less infiltrated eyebrow, but had not examined them. Upon examination in the evening, I found, as stated in my report, the bacillus of leprosy in great numbers. Thus, I think, very naturally cleared up what was before a distinct doubt in my mind as to the nature of the nerve affection. The man died upon the following day (Sunday). I have reread my notes upon the case, and can see how a medical man, after reading my report, without having examined the case, should fail to appreciate the difficulty I had in forming an opinion. The difficulty, however, existed, and my experience of nerve leprosy is such that I am extremely cautious in forming an opinion, a mistake in which appears to be criminal in the injustice done to the patient.

I have, &c.,  
G. H. TAYLOR,  
Superintendent.

#### No. 2.

The Acting Secretary, Board of Health, to The Medical Superintendent, Coast Hospital, Little Bay.

Sir, Board of Health Offices, 127, Macquarie-street, Sydney, 14 November, 1895.

I am directed by the President to request you to be good enough to furnish, by the morning of Tuesday, the 19th instant, a connected account of the history and case of Timothy O'Rourke, together with your notes of the *post-mortem* examination of his body, and to cause copies of all written records made concerning this patient at the Coast Hospital to be attached to your connected account.

I have, &c.,  
C. A. SIMMS,  
Acting Secretary.

As it appears from Dr. Taylor's report that the diagnosis of tubercular leprosy was duly established in the case of O'Rourke, ask Dr. Taylor to state why he failed to comply with the provisions of the Leprosy Act of 1890, clause 3.—A. STUART, President, 20/11/95.

These records do not seem to be complete. Dr. Taylor was asked to send "all written records," and only the bed-card and a temperature chart—one of which is undated even—have been sent.—A. STUART, 22/11/95.

The Superintendent, Coast Hospital, Little Bay, to The President, Board of Health.

Sir, Coast Hospital, Little Bay, 18 November, 1895.

I have the honor to forward you the following particulars *re* Timothy O'Rourke, asked for in your letter of 14th instant.

This man, who gave his age as 71 years, was admitted into the Coast Hospital on the 30th May of this year, and placed by me under the medical care of Dr. Fordyce. At that time he complained of an abscess in his left thigh. Improving a little under the treatment, he was discharged on the 1st July.

Readmitted on the 2nd October, and placed by me under the medical care of Dr. Shaw. The time between the 1st July and the date of his readmission, the patient stated, he had spent in one of the Government Asylums. He still had a discharge from a small sinus in his left thigh, and complained of nothing beyond this. Upon 19th October, Dr. Shaw being absent from the hospital upon leave, I took medical charge of his wards, and, examining O'Rourke, and finding symptoms suspicious of leprosy, I had him

him transferred to one of the wards I take under my medical care. From that date until the hour of his death I examined him carefully from day to day. I mention these facts in order to explain to you how very obscure the case was, and to point out to you that this is a very reasonable excuse for it not having been suspected at an earlier date. The man had an appearance of robust health for his years. His face was bronzed, and he looked like a hardy old sundowner. He stated that he was a native of Ireland; had been twenty-five years in the Colony; was a widower, with several children, none of whom he had seen or heard of for many years. Until two years ago he enjoyed vigorous health, and worked as a labourer. At that time he commenced to suffer from rheumatic pains in his hands and legs. About six weeks prior to his admission to the hospital a swelling appeared on his left thigh, the skin over which broke down, and a quantity of pus escaped. He complained of nothing else. Upon examination, I found the hair upon his face and scalp to be thick and healthy. There was slight infiltration of the skin of both eyebrows, the capillaries appearing here and there as minute red lines. The ears, nose, and lips were normal. Skin over chest and back loose and wrinkled, and indistinctly there could be seen slight discolorations of small areas of skin, but in no place were they well marked, and the wrinkled and lustreless condition of the skin made their detection a difficult matter. The patient was unconscious of their presence. The skin over back of both forearms showed slight desquamations; that of hands and lower limbs appears to be normal. Finger-nails thinner than normal, with longitudinal furrows upon them; toe-nails normal; sight unusually good in so old a man; hearing good; tongue clean; mucous membrane of mouth and throat healthy; muscular system well developed, excepting some atrophy of dorsal interossei and thumb muscles of left hand; left ulnar nerve slightly enlarged and hardened at notch, tender to pressure, with sensation referred to ring and little fingers; about one-quarter of an inch above the notch a fusiform enlargement of the nerve could be detected; left radial nerve enlarged, hardened, and tender; right ulnar and radial nerves apparently normal; perineal nerves on each side enlarged, hardened, and tender; there was slight anæsthesia of left hand with well-marked analgesia, the anæsthesia being most evident over little finger; slight anæsthesia and well-marked analgesia on both feet, and in a less degree over both lower limbs below knee; thermal anæsthesia over both hands and feet. No alteration in sensation could be discovered in the discoloured areas of skin over back and chest, as compared with the normal skin; under the action of pilocarpine administered subcutaneously the hands and feet remained perfectly dry. Slight perspiration was noticed upon the body irregularly distributed, and having no relation to the discoloured patches of skin. The heart was slightly hypertrophied; the lungs fairly healthy; area of hepatic dulness slightly increased. Spleen enlarged; a trace of albumen in urine; reflexes normal. Inguinal glands enlarged more so in left side than right; axillary glands in left side slightly enlarged. After repeated examinations of serum expressed from left eyebrow, with a negative result, I was able to find the bacillus of leprosy in great numbers in the serum of right and less infiltrated eyebrow. This patient was therefore suffering from tubercular leprosy in a very early stage. I think, also, that the affection of his nerves was leprosy in its nature. Upon the 3rd November he became suddenly ill, with symptoms of acute and extensive pleurisy, and he died on 9th November.

I have, &c.,

G. H. TAYLOR,

Superintendent.

Coast Hospital, Little Bay, ———, 189 —.

*Post-mortem* on Timothy O'Rourke, died at 2:30 p.m. on Sunday, 10th instant. Right pleura covered with recently effused lymph. There were no traces of old adhesion, and the left pleura was healthy. Both lungs deeply congested, in other respects healthy. Pericardium normal, coronary vessels slightly atheromatous. Left ventricle hypertrophied. Small patch of atheroma immediately above aortic valves. Liver slightly enlarged, and apparently fatty. Spleen enlarged. Left kidney enlarged and almost entirely replaced by large cysts. Right kidney enlarged and slightly cystic. Skin upon outer side of left side thigh just above knee discoloured and thickened; tissue beneath found to be dense and infiltrated, and channelled by several minute sinuses. Left inguinal and axillary glands slightly enlarged. Left ulnar nerve enlarged at notch, and a little above this, expanding into a fusiform enlargement of about an inch in extent. Left radial nerve enlarged and thickened. Both perineal nerves enlarged and thickened. Nothing abnormal about larynx. I found the bacillus of leprosy in the spleen, but not in great number.

G. H. TAYLOR,

Superintendent.

Coast Hospital.

Ward No. IV.—Case, abscess in left thigh.

NAME, Timothy O'Rourke; age, 71; occupation, labourer; religion, Roman Catholic; residence, 17, Swan-street, City. Date of admission, 30th May, 1895; discharged 1st July—better.

H. S. FORDYCE, M.B., C.M.

Date.	Prescriptions	Remarks.
31 May.....	R— Pot. Iod. grs. x ..... Sod. Bicarb. grs. xv. .... Spts. Chlorof. ℥ x ..... Infus. Gent. ad. ʒi .....	Rheumatism, five to six years. Abscess on left knee inner side—began four weeks ago. No cough. Appetite fairly good. Tongue clean. Temperature, normal. Urine (?).
6 June..... 10 „ .....	Mist. Pot. Ct. C. Buchu ʒp.—J.A.S. } Pulv. Jalapæ Co. ʒi .....	

Diet, 31st May, No. 2 milk, beef tea, bread, broth, porridge, rice. June 13th, custard, vegetables, and potatoes. June 15th, chop.

No. 3.

The President, Board of Health, to The Medical Superintendent, Coast Hospital,  
Little Bay.

Sir, Board of Health Offices, 127, Macquarie-street, Sydney, 10 January, 1896.

I have to communicate to you that in connection with the case of Timothy O'Rourke, who died of leprosy in the Coast Hospital on 9th November, 1895, it appears to me that your conduct is not satisfactory in that you failed to inform me that there was a case which might reasonably be suspected to be leprosy at a time when your notions in regard to the case were quite as definite as they were when you reported the cases of Turner and Buckman. In order that you may see your position in the matter, I quote from three of your previous reports, as follows:—

Concluding sentence in your letter dated 22nd November, 1895, in regard to O'Rourke's case:—

This difficulty, however, existed, and my experience of nerve leprosy is such that I am extremely cautious in forming an opinion, a mistake in which appears to be criminal in the injustice done to the patient. (But your description is clearly of old-mixed leprosy.)

Compare this with the following:—

22 January, 1895.

I have the honor to inform you that a man named John Turner, aged 69 years, was admitted here on the 21st instant. He had been there previously on two occasions suffering from what I took to be Raynaud's disease. His present condition is suspicious of lepra, and although I could not certify him as suffering from that disease I should like to have Dr. Thompson's opinion.

[This patient was eventually certified by Dr. Goode and Dr. Thompson.]

22 April, 1895.

I have the honor to inform you that a man named James Buckman, 45 years old, admitted on the 11th of this month, has symptoms suspicious of lepra in a very early stage. The man is going into town this morning to see some friends, and states that he will return in the ambulance.

[Dr. Thompson certified this patient same date; Dr. Goode saw him twice, but would not certify.]

So that you not only acted before without that which you now call "extreme caution," but actually now know by experience that an erroneous opinion expressed by you would not necessarily lead to injustice to the patient, and that in virtue of the provisions of the Act itself, which were designed to avoid injustice, and which in the second case above caused the Board to give the patient the benefit of a very slight doubt.

From your second letter, dated 22nd November, it appears that your discovery of the *bacillus lepræ* occurred only on 8th November, the day before the man died. This was not by any means clear in your report of date 18th November, from which it would appear that you had discovered the *bacillus* before the 3rd November. No reasonable person could otherwise interpret the concluding paragraph, which is as follows:—

After repeated examinations of the serum expressed from left eyebrow, with negative result, I was able to find the *bacillus* of leprosy in great numbers in the serum of the right and less infiltrated eyebrow. This patient was therefore suffering from tubercular leprosy in a very early stage. I think also that the affection of his nerves was leprosy in its nature. Upon the 3rd November he became suddenly ill with symptoms of acute and extensive pleurisy, and he died on the 9th November.

Until your statement of 22nd November arrived your message of 8th November appeared positively misleading. It ran as follows:—

Timothy O'Rourke, æt. 70 years, is dying here from pleurisy, &c. He has an obscure nerve disease which may possibly be leprosy in its nature.

Finally, I may point out that you have not even yet complied with the requirements of the Leprosy Act, and, technically, you are actually guilty of a contravention of the Act.

I felt it to be my duty to submit the matter to the Board of Health, and after careful consideration the Board expressed the opinion, "had Dr. Taylor made a full report, as he should have done in the first instance, all subsequent difficulties would have been avoided," and desired me, in my capacity as Medical Adviser, "to suitably reprimand you." This reprimand I now convey.

I desire now to refer to yours of 27th November, 1895, replying to mine of the 25th idem, in which you conjecture that there was some objection to your being supplied with laboratory apparatus, which would enable you to examine the nerves from one side of Kali Johai. I think you ought to have obtained permission before giving away those nerves; but having given them it would have been better if you had at once said to whom you had given them, instead of reporting to me that you had given them to "a friend."

I fail entirely to see what grounds you had for any such conjecture. On 17th September you asked for the apparatus. On 18th September I asked Dr. Tidswell to procure the articles for you. On 1st October certain of the articles were received here and transmitted to you; the remainder were such as could not be immediately procured in Sydney, and included a Swift's and a rocking microtome, which you specified. These had to be made, and were at once put in hand. A Cathcart's, Zeiss's, Thomas's microtomes could all have been purchased in Sydney and delivered at once, but you asked for a Swift's, and that had to be made, and was made in a most satisfactory manner, and sent to you as soon as finished.

I fail to see any ground for your conjecture, and your statement is, in my opinion, unfounded and misleading.

Finally, the nerves when returned were found to have been improperly preserved, and consequently much damaged—probably spoiled; thus the work already done on the other nerves of the other side was largely thrown away, and the comparison of the two sides—of importance in this case—was thus rendered impossible.

I must now refer to the case of Ah Lee. In your report of 28th December, 1895, you say, "Ah Lee died at 5 a.m. this day. From the condition of his body I advise that the *post-mortem* be held to-morrow." Now, considering that it is always desirable to make a *post-mortem* examination as early as possible after death, your advising excited comment, and considering that "to-morrow" was a Sunday it was, fortunately, decided by Drs. Thompson and Tidswell to neglect your advice, and go out on Saturday afternoon. On arriving at the Coast Hospital it was found—you yourself explaining—that your advice was given because you wanted to go into town that day. For this reason two high professional officers were to be inconvenienced by going to the Coast Hospital on such work on a Sunday, and the body was to lie a day longer.

Now,

Now, I wish to bring home to you that had you said it would be "more convenient" for you to have the *post-mortem* on the Sunday I would have had less to say, but that when you "advise" this it is quite a different matter. When a professional man and an officer of this Department "advises" one attaches a certain value to his advice, and I must say that when I find you "advising," as in this case, for your own convenience solely, it weakens considerably my reliance upon your *bona-fides*.

Finally, I regret extremely that I should have to send you such an admonition, for the earlier part of your career at the Coast Hospital was most satisfactory, and it is a pity that it has not so continued. I trust that you will reconsider the position which you have of late chosen to assume, and revert to your earlier attitude.

A. STUART, M.D.,  
President of the Board of Health and Medical Adviser to the Government.

No. 4.

The Medical Superintendent, Coast Hospital, Little Bay, to The President,  
Board of Health.

Sir,

Coast Hospital, Little Bay, 15 January, 1896.

I have the honor to acknowledge your communication dated 10th January, in which you convey a censure upon me, in respect to the case of Timothy O'Rourke, who died under my care upon the 9th November, 1895.

I respectfully submit that I consider your censure to be undeserved, and ask you, as my superior officer, to forward a copy of your letter of censure, together with my reply, to the Minister at the head of this Department. In reply to the statements you make I forward the following explanation:—

You state that Timothy O'Rourke died of leprosy. In my opinion he died of pleurisy; and as at the *post-mortem* examination of his body, held thirty hours after death, my diagnosis was confirmed, and as I also found cystic disease of both of his kidneys, I certified the cause of his death to be from a combination of these diseases; you then state that "your notions in regard to the case were quite as definite as they were when you reported the cases of Turner and Buckman." I differ with you in regard to this statement.

Turner had symptoms of leprosy in an active stage; he had necrosis of the bone of his toes—well-marked discoloration of certain areas of his skin, in some of which there was alteration of sensation; he had also eruptions of bullæ. The difficulty of diagnosis in his case was due to the character of the necrosis, which did not resemble that usually found in nerve leprosy, and also the character of the skin discoloration, which resembled that usually associated with the tubercular form of the disease.

In the case of Buckman there were also active symptoms of leprosy; he had eruptions of bullæ and perforating ulcers. If you will kindly refer to the history of Buckman's case, written by Dr. Ashburton Thompson, you will find that at the end of his statement he highly commends my having been able to detect this case. Yet there were symptoms which, to a man with clinical experience in leprosy, would at once suggest the disease.

In the case of O'Rourke there were no active symptoms, and I think the fact that Dr. Shaw, who has acted as Medical Officer here during 2½ years, and Dr. Fordyce, who has been nine months upon duty here, and who had the case under their observation alternately for nearly one month each, seeing and examining him day by day, and entirely failing to observe any symptoms of leprosy, must impress you with the fact that the disease was obscure. Doctors Shaw and Fordyce are careful and observant officers, and their experience of leprosy is beyond that of ordinary practitioners. I enclose a report upon the case by these gentlemen.

You then state, "But your description is clearly of old mixed leprosy." I respectfully submit that this is an extraordinary statement. The only symptoms of tubercular leprosy the man had was a slight infiltration of the skin of both eyebrows, so slight that the hair upon them was apparently unaltered—so slight, that the nurses in the ward and the medical officer who had charge of the case failed to notice anything abnormal. The very slight discoloration in certain parts of the skin over his body did not appear to have any clinical significance, as sensation over them was normal, and after subcutaneous injection of pilocarpine no inference could be drawn. As to the nerve affection, the skin over his limbs was normal in appearance; there was no history or evidence of ulceration of skin, or necrosis of bone, no contraction of fingers, no atrophy of the shafts of bone, no paralysis of the muscles of the face, no eruption of bullæ—his only external lesion being an abscess in his left thigh, and this presented no special feature.

In writing an official report upon a case of this kind, and knowing that my report would be exposed to criticism, opinions can be stated and full clinical significance given to symptoms with more confidence after the *post-mortem* examination than before it. My report was written when I had certain knowledge that the patient was a leper. Not only had I found the bacillus in the serum expressed from the eyebrow, but I had also found it in the spleen, and therefore knew that the officer at the Board of Health could not fail to find it. Had I failed to find the bacillus my report would have been more guarded. You then state, "So that you not only acted before without 'extreme caution,' but actually now know by experience, &c."

I must refer you to my letter dated 12th June, 1895, which reads as follows: "I have the honor to inform you that in my opinion all cases of nerve leprosy uncomplicated by the tubercular form of the disease could be discharged from the Lazarette without danger to the public health. Henry Thompson has enjoyed excellent health since his admission to the Lazarette. The symptoms of nerve leprosy in his case are not as well marked as they were in the man Buckman, who left the Coast Hospital a week ago. A Chinaman, called George Yet, commonly known in the Lazarette as Ah George, I have not been able to observe any symptoms in this man's case during the last two years which would justify his detention in the Lazarette." This letter was written in answer to one of yours asking what patients could be released from the Lazarette without danger to the public health.

Ah Yet and Thompson are still confined here. Upon the 3rd August, 1895, you visited the Lazarette, accompanied by Dr. Tidswell. This date is fixed in my mind from the fact that upon that day the nerve leper, Kali Johai, died. I took you and Dr. Tidswell into the hut in which George Yet lives, showed you his legs and feet, and informed you that, in my opinion, the man did not suffer from leprosy.

You

You replied that he was an old Chinaman, and was happier in the Lazarette amongst his countrymen than he would be in the Benevolent Asylum. I also pointed out to you the man Thompson, who at that time was chopping wood, and stated that, in my opinion, he should be discharged. You did not examine him. After thinking over this matter it occurred to me that there was a want of justice in relation to the treatment of the men Thompson and Buckman, and an illegal injustice to the Chinaman Ah Yet.

I can confirm your statement as far as it went, but consider that I was fairly entitled to form the conclusion that if Ah Yet is not suffering from leprosy, and, in my opinion, he is not, he is illegally confined in the Lazarette; and secondly, if he is not suffering from leprosy, the gentlemen who certified him were wrong in their diagnosis. I think, therefore, that I was justified in stating that "my experience of nerve leprosy is such that I am extremely cautious in forming an opinion, a mistake in which appears to be criminal in the injustice done to the patient."

In the paragraphing of my original report there is a mistake, and for this, and this only, I apologise. On the 8th November I telephoned to you that "Timothy O'Rourke, aged 70 years, is dying here from pleurisy, &c. He has an obscure nerve disease which may possibly be leprosy in its nature." This was my opinion the day before the patient died. My original report was a complete one. My letter of 22nd November, beyond informing you of the exact date I found the bacillus, did not add to the value of the original report.

I consider, therefore, that, unless you still suspect me of being dishonest, the mistake in paragraphing was not a serious one. If you still suspect me, an inquiry at the Coast Hospital can very clearly disprove your suspicion. I have already written to you my explanation *re* the nerves taken from Kali Johai.

Concerning my letter of "conjecture," as I did not receive an answer to my request asking for the apparatus, and after waiting for many weeks and not having received what I wanted, I came to the conclusion that it was not to be granted to me. In this I now see that I was mistaken, and apologise for my mistake, at the same time my conjecture was an honest one.

The nerves were properly prepared when I handed them to Dr. Goode. I did not mention that gentleman's name in my first letter to you, as I did not wish to subject him to any annoyance.

With reference to Ah Lee, an urgent matter called me to Sydney upon the afternoon of the day he died (Saturday). I examined his body in the morgue, and considered that the *post-mortem* could be delayed until Sunday morning, when I would be able to perform the autopsy myself. As I am in medical charge of the Lazarette, and do all the medical and surgical work myself, I was anxious to perform the *post-mortem*.

In the case of O'Rourke, who died upon a Saturday morning, by your order the *post-mortem* was delayed until the afternoon of Sunday, in order that Drs. Thompson and Tidswell might be present. I consider that, as my superior officer, you would certainly give me, doing all the medical work at the Lazarette, the consideration that you extended to these gentlemen, and I therefore advised that the *post-mortem* should be performed upon Sunday. That you should infer from this that your reliance upon my *bona-fides* is considerably weakened I consider to be an unmerited aspersion upon my character.

Yours, &c.,

GEORGE HENRY TAYLOR,  
Medical Superintendent.

Case of Timothy O'Rourke.

Coast Hospital, 11 December, 1895.

THE patient Timothy O'Rourke was under my care from the 7th October till he was transferred to Ward 8. He was suffering from an abscess in his thigh: he never complained of anything besides. Frequently he said to me he was in splendid health excepting his leg. He appeared to me to be a very strong healthy man for his age.

I did not suspect him to be a leper, as there was no marked condition to suggest the idea of leprosy. It was not until Dr. Taylor drew my attention more particularly to him that I noticed some slight thickening of the skin of his eyebrows and some slight affection of his nerves. The wasting of the interosseal muscles he had in common with people of his age.

Of all the cases of leprosy I have seen this certainly was by far the least marked. Until the time of his death I had nothing to lead me to suppose he was an undoubted leper, and I believe that without the detection of the bacillus of leprosy it would have been impossible to certify him.

F. C. S. SHAW, M.B., Ch.M.,

Senior Resident Medical Officer.

The Case of Timothy O'Rourke.

Coast Hospital, 10 December, 1895.

HE was admitted into this hospital, 30th May, 1895, under my care; and was discharged apparently well 1st July, 1895. He was then examined by me in the routine manner. His circulatory system and respiratory system were apparently normal. His urine was normal. There was no eruption of any sort on his body. The only obvious lesion about his person was a chronic abscess on the inner side of his left thigh—just above the knee. His knee-jerks were present. For a man of his years he seemed exceptionally vigorous. With rest and treatment the abscess healed up and he was discharged. The next time he came in he was under Dr. Shaw's care. I saw him one day, but observed nothing beyond the fact that the abscess had broken down again. Some time after his admission I heard Dr. Taylor mention him as an interesting case. He transferred him under his own observation, and spent several days in going over his various symptoms. I went up personally to examine this case, and although then having the suspicion of a possible case of leprosy, after careful examination, I was not at all convinced that the signs and symptoms pointed to leprosy. Many of the symptoms seemed to me to be due to senile decay. Dr. Taylor discussed the case freely with Dr. Shaw and myself, but I never gathered that he had more than a suspicion that it might be leprosy. It was not until after the patient's death that I was aware he was a leper.

I have carefully examined many of the patients in the Lazarette. In these there were obvious signs of leprosy. In the case of O'Rourke there was no obvious external indication of his disease. In my opinion, only a person looking out for leprosy could have even suspected it; and careful and repeated examinations must have been necessary in this patient's case.

HENRY SINCLAIR FORDYCE, M.B., Ch.M.

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No. 5.

## Minute by The Chief Secretary.

Chief Secretary's Office, Sydney, 22 January, 1896.

I SHALL be glad if the Medical Adviser to the Government will let me see the correspondence from the Superintendent of the Little Bay Hospital respecting the treatment of lepers, or any other subject connected with the institution.

J.N.B.

No. 6.

## The Medical Adviser to the Government to The Principal Under Secretary.

Sir, Board of Health Offices, 127, Macquarie-street, Sydney, 30 January, 1896.

In accordance with the request of the Medical Superintendent of the Coast Hospital these papers are forwarded to the Honorable the Chief Secretary. The Medical Superintendent's letter of the 15th January, as regards O'Rourke's case, refers to many different points, but they are almost all beside the question, which is not one so much of medicine as one of discipline. The fact remains that being an officer of the Government, and under my authority, and having a patient whom he suspected of leprosy, he did not at once communicate with me, as it was clearly his duty to do, in order that I might take the proper steps to comply with the Leprosy Act in having the patient examined by two medical men—usually Dr. Ashburton Thompson and Dr. Goode in such cases.

It is necessary to remark here that although the Leprosy Act does not require that suspected cases of leprosy shall be reported, so that a general practitioner need not report until he is tolerably sure (though at the risk of being told by a magistrate that he ought to have formed a positive opinion sooner, or, in a doubtful case, to have sought advice), yet it is manifest that similar reserve on the part of a subordinate officer of the Government cannot be passed over.

The reprimand in O'Rourke's case was conveyed to Dr. Taylor at the request of the Board of Health, most of whom are medical men, and all of whom are acquainted with the subject-matter of the Leprosy Act. Somewhat severe notice has been taken of this and of the other matters referred to in my letter to Dr. Taylor, as, on the whole, for some time past, this officer's conduct has not been so satisfactory as it should have been.

I have, &amp;c.,

A. STUART, M.D.,

Medical Adviser to the Government.

A copy of [this communication might be sent to Dr. Taylor, and he should be called upon for an explanation of his conduct.—C.W., 4/2/96. Approved.—J.N.B., 4/2/96. Done, 5/2/96.

No. 7.

## The Medical Superintendent, Coast Hospital, Little Bay, to The Principal Under Secretary.

Sir, Coast Hospital, Little Bay, 7 February, 1896.

I have the honor, in reply to your letter of the 5th instant, to furnish you with an explanation of my conduct in the case of Timothy O'Rourke, who died under my care at the Coast Hospital, upon the 9th November last.

You state "relative to your action in the case of one Timothy O'Rourke, who died of leprosy," I respectfully point out to you that he died of pleurisy, and that the leprous disease from which he also suffered was in a very early stage, and, in my opinion, had nothing to do with the cause of his death.

O'Rourke was admitted into the Coast Hospital under an order signed by the Government Medical Officer, Dr. Paton, upon the 31st of May last, and was then placed by me under the medical care of the Junior Medical Officer (Dr. Fordyce). He appeared to be a hardy old tramp, and complained of an abscess in his left thigh. Improving under treatment, he was discharged upon 1st July.

Readmitted upon 3rd October, under an order signed at the Hospital Dépôt by Dr. Paton, the Government Medical Officer, he was placed by me under the medical care of the Senior Medical Officer at the Coast Hospital (Dr. Shaw). He appeared to be in robust health for his years, but the abscess in his left thigh was discharging. Upon 19th October Dr. Shaw was absent from the hospital upon a holiday, and I therefore examined the case in his wards. As I make it a routine matter to examine every case under my care as carefully as I would do in dealing with a suspected case of leprosy, I was able to discover certain symptoms which, although vague, appeared to point to leprosy: I therefore transferred the patient to my care, and very carefully examined him from day to day. He resented these examinations, the meaning of which he was unable to understand, and it was an exceedingly difficult matter from his answers, which varied considerably at different times, to arrive at a conclusion as to how far the sensation in his hands and feet was abnormal. I was never certain on this point. Upon the 3rd November he became suddenly ill, with symptoms of acute pleurisy. Upon 8th November, as it was evident to me that he could not survive the illness, I considered it my duty to report the case to the Board of Health, in order that the various organs could be examined. At that time I was very doubtful about my opinion, and a definite diagnosis from the facts I had before me was quite impossible. I noticed some slight thickening of the skin of both eyebrows, and some time before death I had, upon three occasions, expressed some serum from them with a negative result. I made a final attempt on the day prior to his death, and was able in the evening to discover the bacillus of leprosy, and therefore knew that the man was a leper. When I arrived at the hospital upon the following morning the man was dead, and his body had been removed to the morgue.

I was exceedingly proud of my case, which I considered to be the earliest one of tubercular leprosy ever detected.

The case of O'Rourke was one of many cases I have had under observation, and one of many from whom I had expressed serum, in the wards of the General Hospital, in search of the bacillus of leprosy. From the care I take in the examination of such cases, and from my clinical experience in this disease, I consider that if I am unable to arrive at a definite diagnosis neither Dr. Goode nor Dr. Thompson could do so.

Professor

Professor Stuart, in his communication to you of the 30th January, states that "the Medical Superintendent's letter, of the 15th January, as regards O'Rourke's case, refers to many different points, but they are almost all beside the question, which is not so much as medicine as of discipline." I consider that the points referred to in my letter were in reply to definite statements made by my superior officer. He also states that "having a patient whom he suspected of leprosy, he did not at once communicate with me, as it was clearly his duty to do." I have never been informed that this is my duty; on the other hand, I considered that it is clearly my duty, on the experience I now have, not to report a suspect until I, who have the case under observation from day to day, am in a position to certify. This did not hold good during the first few months of my appointment at the Coast, as at that time my experience of leprosy was small. I also considered that I was acting in the interest of the Board of Health and of my patient in so doing, and for this reason:

If you will kindly refer to my letter of the 15th January, to which Professor Stuart draws your attention, you will read that I have reported to the President of the Board of Health that in the case of a Chinaman named George Yet, commonly known in the Lazarette as Ah George, "I have never been able during the last two years to observe any symptoms in his condition which would justify his detention in the Lazarette." And also "that a man named Thompson has symptoms not as well marked as in the case of Buckman," who was reported by me, and who was discharged.

Professor Stuart states that Buckman "was given the benefit of a very slight doubt." This very slight doubt did not extend to the unfortunate man Thompson, who is confined in the Lazarette. After this I brought the matter personally under the notice of Professor Stuart, during one of his visits to the hospital, the only notice of my appeal being that Thompson was examined by the Chief Medical Inspector. As far as I am aware, the Chinaman has never been examined during my period of service at the hospital, excepting by myself.

The man Thompson is married, and has eight children; he enjoys robust health, and, although he has certain symptoms suspicious of nerve leprosy, I emphatically state that they are not sufficient to warrant his being certified as suffering from leprosy. Under an order from the President of the Board of Health, I undertake the care of the patients in the Lazarette and do the medical and surgical work myself. I am therefore in this position—if I am expected to report a case, which, after days of careful examination I am unable to certify, the case may still be certified by the medical men who are sent by the President of the Board of Health. The case is then committed to the Lazarette, and thenceforward is under my care. I see the patient day by day, and each time I must feel that I have been instrumental in committing a human being to the most miserable existence I can conceive of, *i.e.*, life in the Lazarette. And I must also remember that the case, even if discharged, is branded for life. This would be my feeling in regard to the man Thompson had I reported his case in the first instance.

It is no mental hardship for the Chinaman, Ah George, to be in the Lazarette, but the man, in my opinion, is not a leper, and leprosy is regarded by the Board of Health as contagious.

The reprimand from the Board of Health was, "If Dr. Taylor in the first instance had written a full report, as he should have done, &c." This referred to an error in the paragraphing of my original report, in which it would have been clearer had I made a chronological record.

I must therefore infer that the fact of my not having reported the case at an earlier date was discussed by the Board, but that they did not confirm Professor Stuart's opinion of my conduct.

In conclusion, I submit that a survey of my career in the Government service, in which I have held several important positions, proves me to have ever been a conscientious, hardworking, and loyal servant of the Government, and I therefore appeal to the Minister for protection in this matter.

Reports upon O'Rourke's case by Drs. Shaw and Fordyce, Medical Officers at the Coast Hospital, are at the Board of Health. Perhaps you will kindly send for these, as they throw some light upon the subject.

I would also respectfully ask that Professor Stuart's letter of censure be contrasted with his statement to the Minister, and that my letter of reply be read in conjunction with this letter.

I have, &c,

G. H. TAYLOR,

Medical Superintendent.

Read, Meeting, 3rd March, 1896.

DIRECTED that an extract from Dr. Taylor's letter respecting the patients Yet and Thompson should be given to the Chief Medical Inspector, who should be requested to proceed to the Lazarette and furnish a further report. The rest of the report to be postponed until the President's return.

C.A.S.

Done, 4/3/96.

No. 8.

The Medical Adviser to the Government to The Principal Under Secretary.

Memorandum.

Board of Health Offices, 127, Macquarie-street, Sydney, 21 February, 1896.

I REGRET that Mr. Taylor still argues on the medical aspects of the case of O'Rourke, and that he refers to it alone. This case was merely one incident of a career, but as he admits that O'Rourke did suffer from leprosy it will not be necessary for me to refer more fully now to this matter than to point out that lepers die from all sorts of intercurrent affections, and that pleurisy may very easily have been the particular affection that carried O'Rourke off in the end. But that is neither here nor there. He *had* leprosy, and the fact was not reported. O'Rourke's case has assumed an excessive importance in this matter, because it brought Mr. Taylor into collision with the law of the land. As to the other grounds of dissatisfaction, Mr. Taylor offers no further explanation. In regard to Mr. Taylor's assertion of his being a good servant of the Government, that I was prepared to admit some six months ago, but my own subsequent experience, and the reports of Dr. Ashburton Thompson, Dr. Tidswell, and Quarantine Officer Payne, sent herewith for the Minister's information, will show that, as stated in my letter to Mr. Taylor, the latter part of his service in this Department has not been satisfactory. I do not see any other way out of the difficulty than by referring the matter for the consideration of the Public Service Board.

A. STUART, M.D.,

Medical Adviser to the Government.

In

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In a case of this kind the Public Service Board can only act after the officer has been suspended by the head of the Department, and they would suggest that the proper course in the present case is that it be dealt with departmentally.—C.L. The Under Secretary for Finance and Trade.

Dr. Taylor's conduct from the statements before me appears to deserve censure, but I cannot at present see my way clear to suspend him. The papers may be again referred to the Medical Adviser.—J.N.B., 17/3/96.

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Memorandum.

Board of Health Offices, 127, Macquarie-street, Sydney, 22 January, 1896.  
THE President of the Board of Health and Medical Adviser to the Government directs me to transmit to Drs. Thompson and Tidswell the following minute, namely:—

“Certain matters having arisen which render it necessary to review the conduct of the Medical Superintendent of the Coast Hospital, I wish to have a written report from you as to Dr. Taylor's conduct towards you at the *post-mortem* examinations, which gave occasion for the memorandum which I subsequently issued relating to the procedure to be followed upon such occasions. Your reports were made to me orally, and I did not then ask for written reports, because I thought the matter would be speedily at an end; but as this expectation has not been realised, I think it well to have the matter written down.”

C. A. SIMMS,  
Acting Secretary.

Forwarded to the Chief Medical Inspector in the first instance.—C.A.S., 22/1/96. The Medical Officer in charge of the Biological Laboratory.—C.A.S., 29/1/96.

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28 January, 1896.

THE transaction referred to occurred about five months ago (about 4th August, 1895), and I cannot pretend to remember details.

The main facts are, that although Dr. Taylor had been warned we should attend, and although we arrived at the usual time (soon after half-past 2), we found the microscopic inspection almost completed; the spinal cord was in process of being removed. And, secondly, Dr. Taylor's manner and behaviour were so exceedingly rude (by way, apparently, of resenting my presence) that I considered whether I should not exercise my powers as senior officer and then and there suspend him until you could be communicated with; but up to that day I had been in the habit of meeting him on perfectly friendly terms rather often—once a week—or at all events rather often. No cause of offence that I was (or am) aware of had been given or occurred, and I was really astounded and unable to guess at any colourable ground, reasonable or otherwise, for his then behaviour. Accordingly, and reflecting that in itself the thing was of little importance to me on the one hand, while on the other it was certain to be corrected, in as far as it was a gratuitous infringement of official discipline, I held my tongue and made no remark whatever.

Since that occurrence Dr. Taylor has confined his communication with me strictly to official matters, and his manner, though no longer aggressively rude, has been such as to show that he maintains the attitude of mind he assumed originally. I continue absolutely in the dark as to Dr. Taylor's motive, and as long as the conduct of business is not seriously interfered with I cannot pretend that I am very anxious to be enlightened.

J. ASHBURTON THOMPSON,  
Deputy Medical Adviser.

The Medical Adviser.

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Sir, Board of Health Offices, 127, Macquarie-street, Sydney, 29 January, 1896.

In reply to your memorandum (22/1/96), I have the honor to submit the following written report, as therein desired.

On 3rd August, 1895 (Saturday afternoon), I proceeded, in company with the Chief Medical Inspector, to the Coast Hospital, in order to be present at a *post-mortem* examination on the body of the leper, Kali Johai. In obedience to your instructions to me, which you gave during a visit to the Lazarette a few days previously, and, in Dr. Taylor's presence, I took with me the necessary materials for obtaining specimens of the diseased tissues for histological examination.

On our arrival at the hospital we found that the *post-mortem* was practically concluded—that is to say, the usual examination of the internal organs had been completed, the body turned face downwards, and Dr. Taylor appeared to be engaged in removing the spinal cord. The various viscera, thoracic and abdominal, were lying, unsliced, on the table, and from these I immediately proceeded to obtain such specimens as I thought necessary. I then assisted the Chief Medical Inspector to dissect out some of the nerves from the right arm and leg. This being a case of nerve leprosy, it was a matter of some importance to compare the condition of the nerves on the two sides of the body. To do this satisfactorily it was essential that the portions of the nerves to be compared should exactly correspond, and be subjected to precisely the same treatment as regards hardening, section cutting, staining, &c., in the course of their preparation for microscopical examination. Having secured specimens from the right side, we turned to the left. At this point we were interrupted by Dr. Taylor, who stated, with unnecessary vehemence, that we must leave one side for him; we could have our side, he said, he wanted the other for himself. I was not altogether unprepared for this demonstration on Dr. Taylor's part, as he had been acting strangely all through. On our arrival he had gruffly returned our greetings, and subsequently had not condescended to notice our presence, beyond returning curt replies to a few questions directly addressed to him. Further, he had varied the usual procedure of a *post-mortem* examination by occasional indulgence in somewhat aggressive whistling and snatches of comic songs. No attempt was made to discuss the case we were dealing with, such as is usual at *post-mortem* examinations. Altogether, it was the most curious function of the kind I have ever been present at. At the time of Dr. Taylor's interruption I was uncertain as to my right to claim the tissues in question for examination in the biological laboratory, and as I wished to avoid an open quarrel, which seemed imminent, I left them *in situ*, as demanded by Dr. Taylor. Neither the Chief Medical Inspector nor I made any reply, nor had we said or done anything to provoke such rudeness. The arrival of some visitors (Sydney doctors) soon after relieved the state of

“tension”

"tension" to which Dr. Taylor's discourtesy had given rise. To one of these gentlemen Dr. Taylor transferred his attention, and shortly became involved in a rather heated argument. I completed the preparation of the specimens I had already secured, but I was so far disturbed by Dr. Taylor's conduct that I left undone several things which I went there with the full intention of doing.

During the drive back to Sydney not one word passed between the Chief Medical Inspector and myself as to Dr. Taylor's behaviour, and I heard no more of it until questioned by you on the subject.

As, I presume, sir, your request involves some expression of opinion of these occurrences, I feel bound to state that I consider Dr. Taylor's conduct was extremely rude, unseemly, and uncalled for. In the first place, it was very discourteous to have hurried through the *post-mortem* before our arrival. He had been duly informed of our intention to be present, and it would have been only common politeness to have waited for us. We arrived at the hospital before 3 o'clock.

As to his conduct in the *post-mortem* room, I was at first inclined to regard it as merely eccentric, or, at least, mere "swagger," for the benefit of his subordinates. This impression soon gave way to the feeling that Dr. Taylor was indulging in deliberate rudeness. To resent our taking the specimens referred to above was childish in the extreme, for, as you know, sir, there is enough tissue in the nerves in question to supply a college full of pathologists with specimens, let alone two persons. They might very easily have been shared between us, and would have been had not Dr. Taylor raised this selfish and misguided objection. That he should obstruct, where he was reasonable expected to assist, was a painful surprise to me.

I was, and I am still, practically a stranger to Dr. Taylor. Beyond speaking to him for a few minutes on the occasion of our formal introduction at the office, and again meeting him in your presence on the occasion of the visit to the Lazarette referred to above, I had not had any communication with Dr. Taylor, neither professional nor social. Being quite unconscious of having given any cause for it, I could not interpret Dr. Taylor's rudeness as directed against me personally, nor does this aspect of the case at all interest me. My official position in relation to these *post-mortem* examinations has since been distinctly defined by you. My duty is clear, and will be performed to the fullest extent of my ability. For myself I say no more. As to Dr. Taylor's relationship to the Chief Medical Inspector I know nothing, but I could not, and I cannot now, conceive of any cause of complaint against that gentleman which could justify the utter want of respect for his official position which Dr. Taylor exhibited. When it is remembered that the junior medical officers of the hospital were present, I cannot but consider that such behaviour bordered on an insult to the Chief Medical Inspector.

Putting aside the official aspect, it was indefensible from a purely ethical point of view. I was quite mystified as to the cause of Dr. Taylor's outburst at the time, and I do not understand it now. I have, in conclusion, to express my sincere regret in being obliged, as a matter of duty, to set down in black and white the above details concerning the very ungentlemanly conduct of an official and professional brother, though a stranger to me. Such conduct I would, for my own part, willingly forget. At the same time I wish to assert that I have endeavoured to make an honest, unbiassed statement, neither exaggerating nor abating one jot of my impressions of it.

The President.

I have, &c.,  
FRANK TIDSWELL.

Memorandum.

Board of Health Offices, 127, Macquarie-street, Sydney, 19 March, 1896.

THE enclosed paper is a copy of the memorandum alluded to in my minute of 22nd January, 1896. A copy was addressed to each of the three gentlemen separately, viz., Drs. Ashburton Thompson, Tidswell, and Taylor, but Drs. Thompson and Tidswell were previously told by word of mouth that it did not have any application to them. Dr. Taylor, on the other hand, was not so told. My intention was to deal as lightly as I could with Dr. Taylor, because up to this time (so far as I knew) his conduct had not been so bad as afterwards learned it really was, Drs. Thompson and Tidswell not having so fully disclosed to me the whole of the proceedings at the *post-mortem* examination on Kali Johai, as it afterwards became their duty to do.

A.S.

Sir, Board of Health Offices, 127, Macquarie-street, Sydney, 19 September, 1895.

I wish that where it is possible a *post-mortem* examination of the body be held in the case of every leper who dies in the Lazarette, and I wish the Chief Medical Inspector of the Board (Dr. Ashburton Thompson) and the Medical Officer in charge of the Laboratory (Dr. Tidswell) to have an opportunity of being present; and the Medical Superintendent of the Coast Hospital will therefore give timely notice to the office that such examination will be held. Further, when the death of such patients seems to be approaching the Medical Superintendent will give such timely report of the circumstance to the office that these officers may be warned to be in readiness. It, of course, is understood that the examination is not to be commenced until the above officers arrive—if they are coming—and their purpose in this regard will be communicated to the Medical Superintendent from the office by telephone. The Medical Superintendent will make all necessary arrangements for the examination being performed, and will either conduct the examination himself or direct one of his junior medical officers to do so.

He will afford every opportunity to the Chief Medical Inspector or the Medical Officer in charge of the laboratory of making observations on the morbid appearances as they arise during the examination, and as I wish the principal histological examinations to be made in the laboratory here, Dr. Thompson and Dr. Tidswell are to have such morbid specimens as they may desire.

Finally, it will be wise for everyone concerned to observe the amenities of official intercourse.

I regret that it should have been found necessary to issue the foregoing instructions, but circumstances have arisen which make this course unavoidable. In planning them I have kept in view the fact that the officers concerned are all under one head, and that all are public servants.

The arrangements are therefore conceived rather in the public interest than in satisfaction of professional ethics.

A. STUART, M.D.,

Medical Adviser to the Government, and President of the Board of Health.

George Henry Taylor, Esq., Medical Superintendent, Coast Hospital.

Board

Board of Health Offices, 127, Macquarie-street, Sydney, 19 March, 1896.

THE statement of Quarantine Officer Payne is an accurate statement of what occurred, and I am bound to say that the occurrence made an exceedingly bad impression on me. But here again I had not quite realised what sort of a man Dr. Taylor was, and instead of dealing with him on the spot, as I felt inclined to do, I simply said nothing and did nothing. But when subsequent events threw a different light upon Dr. Taylor's conduct, then I caused Payne to put down in writing a statement of what had occurred.

A.S.

17 February, 1896.

On the 7th October last I drove Professor Stuart to the Coast Hospital. By his order I left him at the sanatorium, and drove to the medical officers' quarters, to fetch Dr. Taylor. Arrived there, I said to Dr. Taylor, "Dr. Stuart is at the sanatorium, and I am sent to fetch you up to him." He entered the house, and I, turning the conveyance, waited for him, thinking he would appear immediately. After waiting a considerable time I asked the servant to repeat my message to Dr. Taylor. He then came out and got into the sociable. When we reached Dr. Stuart, that gentleman—whom we met coming up the hill—referred to the message, in connection, I suppose, with Dr. Taylor's delay in answering Dr. Stuart's summons. Dr. Taylor said that it had not been properly delivered to him. As I had repeated the very words of Dr. Stuart to Dr. Taylor I replied somewhat sharply, deeming my character aspersed by Dr. Taylor's remark, which implied that I had been at fault. This is an account of the circumstance, so far as it concerned myself. My remembrance of it is perfectly clear.

ARTHUR PAYNE.

### No. 9.

Dr. Tidswell to The President of the Board of Health.

[Photographs—please do not fold.]

Preliminary note on the pathological appearances of the tissues of Timothy O'Rourke.—From the Biological Laboratory.—Read, meeting of the Board of Health, this day, 3rd March, 1896.—C.A.S.

Sir,

Biological Laboratory, Board of Health, 24 February, 1896.

In reply to your verbal request of the 22nd instant, I have the honor to inform you that although the pathological examination of the tissues is not yet complete, I forward the following preliminary note on the appearances already observed, in order that the Board may be in possession of all the available information on the subject. A fully detailed report will be presented in due course.

I was not present at the *post-mortem* on O'Rourke, and so cannot speak as to the gross appearances of the tissues. The tissues I have examined were forwarded to the laboratory from the Coast Hospital by the President's instructions.

Within a few days after the *post-mortem* I reported that I had found large numbers of leprosy bacilli in the smear preparations of the spleen. I have since examined sections of the skin, ulnar nerve, popliteal nerve, spleen testis. Leprosy bacilli were present in all these organs—every section examined contained them.

The appended photomicrographs of the sections referred to are part of a series in course of preparation for the annual report. I do not propose at present to enter upon the consideration of the somewhat laborious technique involved in their production, but I may state that they have not been retouched nor manipulated in any way other than that required to produce an ordinary photograph. They actually represent the microscopic appearances. To facilitate inspection I have attached rough diagrams to certain of them. These were prepared from ferrotype prints of the same negative as the photomicrographs to which they refer. The stated amplifications are approximate only, pending some accurate measurements.

As the notes to the figures sufficiently explain the principal appearances observable, I need not describe them further. It will be seen from these photomicrographs that the pathological appearances indicate a widely-diffused and advanced state of the disease.

I have, &c.,

FRANK TIDSWELL.

Here follow eleven photomicrographs.

### No. 10.

The Acting Secretary, Board of Health, to The Chief Medical Inspector.

Sir,

Board of Health Offices, 127, Macquarie-street, Sydney, 4 March, 1896.

I am directed by the Board of Health to enclose you herewith an extract of a letter written by G. H. Taylor, Medical Superintendent of the Coast Hospital, in relation to the patients Georgie Yaw or Yet (otherwise Ah George) and Thompson, confined in the Leger Lazarette, and to request that you will have the goodness to proceed to Little Bay, examine the aforesaid patients, and submit a further report for the Board's information.

I have, &c.,

C. A. SIMMS,

Acting Secretary.

### No. 11.

The Earlier History of Georgie Yaw.

Case XXXIV.—Georgie Yaw, *æt.* 68; admitted 31 December, 1892.

*History.*—Native of Amoy; arrived in Australia in 1848; is a cook, and has travelled all over the country; has twice resided at Mudgee, and lately for the second time; was admitted from Waterloo, a suburb of Sydney; is extremely deaf. *State.*—Is a very big man; pallid; fairly well nourished; he presents no abnormality down to the great trochanters; behind both of these is a brownish discoloration, over which the skin is rough and slightly ulcerated at the centre; tests of sensation having been made elsewhere,

elsewhere, he intimated that these spots were as dead as the form he was then sitting on; on examination it turned out that a pin-prick gave him (apparently) sharp pain, but that the impression was not noticed for a second, or even longer. Everywhere below the knees sensation was very deficient, being present, though delayed, at a few points only. Legs and feet are slightly swelled, shiny, and deep brown in colour—the feet less than the legs; the cuticle roughened at parts. *Right foot.*—The small and great toes are about normal, but incline towards each other; between them the other three are crushed together; all are fattened and shortened, but the middle toe is shortest; over and attached to the first metacarpal bone is a tumour the size of a hen's egg of bony hardness; the little toe is deformed by a partial dislocation of the second phalanx, which rests upon and lies parallel with the second; the nails occupy a position rather behind the middle of the second phalanges. *Left foot.*—The three middle toes are shortened and crushed together, but not so much as those on the right foot; in this case the two halves of the metatarsus seem to have become bent downwards, so as to form a deep sulcus on the sole; by trying to straighten this out severe pain was caused; there is a similar but smaller tumour on this side, placed as on the right foot; nails as on the other side, but those of great toes normally placed. Sensation defective or delayed at many points of the trunk. Ulnars and peroneal nerves about normal. Pilocarpine (0.14 mg.) produced a moderate general sweat in about twelve minutes; on the back its distribution was irregular; two large patches of skin, one on left shoulder and the other across the loins, remain dry; the feet and legs and thighs remain dry; the feet sweated freely over some small areas (inner side of first metatarsal bones, a patch on the dorsum, &c.), but most of the surface remained dry. Four or five small achromatic areas about the size of a hazel nut on the right upper thorax appeared, which were invisible before.

J. ASHBURTON THOMPSON.

### No. 12.

#### The Chief Medical Inspector to The President, Board of Health.

Leprosy Act, 1890.—Report of present state of Georgie Yaw.

6 March, 1896.

I re-examined this patient yesterday.

This patient is a Chinese, stone deaf, and apparently at a much advanced age. His general health remains good—he is thinner than he used to be, and anaemic.

He has the deformities of the feet originally mentioned, and, no doubt, these are congenital. The dorsum of each foot and the lower two-thirds of each leg are deeply pigmented (dark brown), the skin thinned, cuticle desquamating slightly in scales—these pigmented areas are absolutely insensitive; when they were pricked out of the patient's sight, and before he found out what was being done, his face remained absolutely quiescent. Probably he did not notice that he had been touched.

He also still shows the two pigmented spots, one over and behind each trochanter, slightly ulcerated and pinkish in the middle—they are smaller than they were at first. At first these spots were quite anaesthetic, the patient having pointed this out. But now, when he saw the pin, he flinched much whenever he was pricked; however, he flinched just the same when the head was used, and it took a long time to convince him that the head had been used, and that it could not hurt him, though this was done at last. No hyperaesthesia was manifested when the fingers were used. This patient shows no other signs, but the pigmentation of the legs has all occurred since his admission.

For the sake of form, merely, I reaffirm the opinion originally expressed by me several years ago.

J. ASHBURTON THOMPSON,

Chief Medical Inspector.

Read, meeting of the Board of Health held this day, 10th March, 1896.

DIRECTED that the President should frame a reply and submit it to the next meeting. He was desired to state the position in some such terms as these: "Dr. Taylor was admonished because he did not with sufficient promptitude, and in accordance with the law, report a case of leprosy which was in his charge. In his defence he has imported, very improperly, matters to which he has no business to refer. He actually accuses the Board of having overlooked his reports concerning the two lepers to whom he refers. He has done this without proper knowledge and with great impropriety, because the Board had arrived at its decisions after full and careful consideration."

The President was further desired to append descriptive notes of the two cases in question, written briefly and concisely.

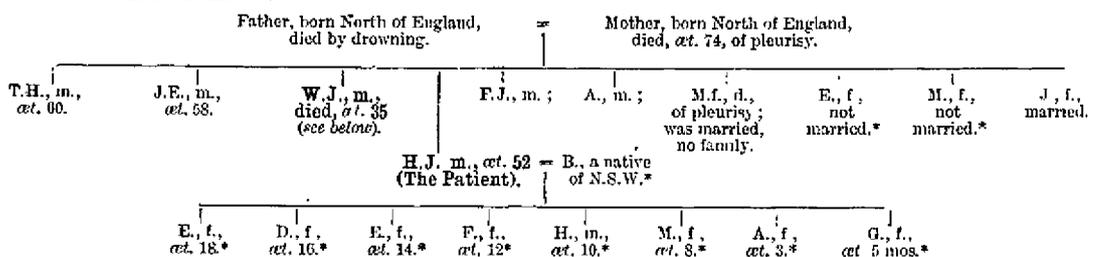
The papers were directed to be again circulated in the meantime.

### No. 13.

#### Earlier History of H.J.T.

Case XLV.—H.J.T., *æt.* 52, admitted 10 October, 1894.

His descent was as follows:—



\* These persons were examined by me, and were in apparent good health.

*History.*—Was born in the neighbourhood of Kempsey (31° 9' S. lat., 152° 50' E. long.), on the Macleay River, in a district which consists chiefly of extensive and fertile alluvial flats, bordered by low hills,

hills, and reaching to the sea-coast. Farming is the principal occupation there, and maize the principal crop.\* The flats are often flooded; there is no malaria. In 1891 the census population was 2,194 (municipality only). The district is rather isolated; it is accessible from Sydney by sea, as well as by rail and a long coach journey—from towns on the inland tableland by a long coach journey; but it is not on the way to any other place, and is a terminal point for travellers. There have always been a very few Chinese in the district, but individual Chinese never stayed long, the conditions being unfavourable to their usual pursuits. The patient had never left the district except for occasional visits to Sydney. He had no trade, but was a farmer, bush-labourer, &c., and much employed at saw-mills. He married a native of New South Wales in 1875. The following details were got from him, and were checked and corrected by his wife and by two sisters, who were all questioned separately.

*Clinical History.*—Had no illness at all during his life, but has met with many accidents, in several of which his head was injured, as, for instance, one from a cricket-ball, one or more from timber, and one from a horse accident; his left leg was broken during boyhood.

*History of Illness.*—About 1882-3 he began to have acute attacks of headache, having up to that time remained in his usual good health. They were said by the patient and his wife to have begun about sunrise and to have ceased about nightfall; probably he had five such attacks, of which the two first lasted a fortnight, the others a less number of days, and the five attacks were spread over about four or five years (1887-8.) In 1885 he met with some accident, while harrowing, which strained the right side of the body; his right hand and foot became rather numb, "powerless," and swelled; a doctor was consulted, who thought he was suffering from a strain followed by rheumatism; the effects—weakness, pain, and cramps, felt over the right side of the body—persisted for long. After eight or nine months, during which he continued to suffer as described, he visited a well-known practitioner in Sydney (since deceased), who, from the account now given, seems to have dispersed a ganglion which had formed on the right hand. From the time of this treatment the hand and foot resumed their normal state, except that both were a little numb. Soon after the accident, but whether immediately or later cannot be ascertained, his manner changed from what it had been and he became slow, either in speaking or in understanding, or in finding words to express himself; and this slowness still remains, although it is now so little marked that it might be taken for rustic dulness. Notwithstanding these symptoms, it seems that no sort of fit was ever suspected, either by his wife (a very intelligent woman) or other relatives, or by the two doctors who attended him. Since about 1885-6 he has often had attacks of drowsiness; the patient said they lasted two or three days at a time; his wife said that "during the last eight or nine years he could sleep whenever he lay down," which was "quite different from his former habit," and "he did not fall asleep while occupied; still, there were some days when it seemed he could not keep awake." After recovery from the strain he returned to work; he was chiefly engaged at a saw-mill, and he met with many accidents; he had some blows on the head from timber, a bullock injured his right hand, a horse knocked him down and trod on his right foot, so that it swelled again. However, according to his wife, he remained in good general health for about two years after returning from Sydney; he then (1888) skinned a putrid bullock, became exceedingly ill before he had finished, was supposed to have been in danger of dying the same night, and never afterwards enjoyed the same measure of good health he had immediately before. Towards the end of 1890 the second finger of his right hand was smashed by timber; he went to Sydney, was admitted to Prince Alfred Hospital, 27th January, 1891, where the finger was amputated at the metacarpo-phalangeal articulation, and discharged well, 18th February, 1891; a note in the hospital case-books was reported by the Medical Superintendent to refer "only to the necrotic state of the phalanx." All the fingers were hurt at the same time, but the others not much. During 1894 he had the third finger of the right hand crushed; it got nearly well, and then was crushed again; he again went to Sydney, and was treated as an out-patient at the same hospital on 18th May, 1894, when the finger was amputated. At this time a member of the staff suggested that he was suffering from leprosy, but others did not concur, and he returned home. After going to work again he got the forefinger of the right hand crushed; he was again admitted to the same hospital on 15th September, 1894, and was reported during his stay under the Leprosy Act. He said that although the numbness of hand and foot had persisted since the strain, "the hand never seemed right" after the first amputation; and the other fingers got "bad" in some way before each of the injuries just mentioned.

*State on Admission.*—Height, 5 ft. 7½ in.; weight (not taken); is grey, rather deaf, of low or slow intelligence; his memory is apparently defective, and probably not trustworthy—at all events, he does not readily remember matters which it seems he ought to be aware of; and he is thin, depressed, and out of health. He has lost the second and third fingers of the right hand, by amputation; the forefinger is swollen and stiff, and the third phalanx is partly absorbed; the interosseous muscles are wasted, and the metacarpus is flattened. The left hand is normal in appearance. The skin on the posterior and inner aspect of the right forearm is rough and desquamating slightly; there is a less degree of the same roughening over the back of the right wrist; there is a very slight reddening of these patches, but no pigmentation. Below the right knee is a slightly reddened, scarcely pigmented, patch of roughened skin, having irregular and fading edges, not elevated, not presenting any obvious sign of atrophy, about 2 inches wide and 3 inches long. About the middle of both legs in front are larger, much more markedly pigmented patches, over which the skin is not so rough, and is atrophied; that on the left shin is most atrophied, and the patient ascribes this patch to injury received during boyhood. The feet are normal, but bluish. Nervous system: The orbicular muscles of the face are under control. The right cubital nerve is decidedly enlarged, and more than normally sensitive; on pressure, sensation is referred downwards only, and correctly; it can easily be traced high up, and it has on it a fusiform swelling, which begins about 2½ inches above the notch, and extends for about 2 inches further upwards. The left cubital is traceable without difficulty; possibly it is a little larger and harder than usual; it is less sensitive to pressure than the right, and sensation is referred downwards only, and correctly. The right external popliteal is easy to find; it seems to be not as sensitive as usual; sensation on pressure is referred downwards only. The left nerve is more sensitive, and less easily found, though well defined; sensation on pressure is referred downwards only. Sensation: On the back of the right hand he cannot distinguish the head from the point of a pin, though blood is drawn; on the outer side of the right forearm he is doubtful whether he is touched or pricked, but perhaps sensibility to pain is a little acuter there; the three patches on knee and shins are quite analgesic judged as in the case of the hand; both feet as high as the ankle-joint are thoroughly analgesic. Sweat-glands:—12 mgr. of pilocarpine injected subcutaneously

\* Maize is not an article of human food in N.S.W., except in the towns and to the extent it is generally eaten (cornflour, maizena, &c.)

subcutaneously produced a moderate diaphoresis. Both hands and both feet remained absolutely dry. The posterior and internal aspect of the right forearm, the right wrist, and the three patches on the legs also remained dry.

A month later the swelling on the right ulnar nerve had become a little less, so that, although distinct, it could scarcely be described as fusiform; tenderness on pressure was also lessened, though still apparently above normal. All other signs remained as at first. Three months later still this swelling was no longer distinguishable; the skin of the right forearm had become about normal, the patch on the right knee had disappeared, the patch on the right shin had very nearly disappeared, and only that on the left shin persisted as at first. In general health he had very much improved, his weight being then 143 lb.; his intelligence (or quickness) had improved to a small extent. All other symptoms remained as before; the analgesia remained as well marked as at first at all points named, and, when touched with the finger on the left foot he started as though he had received the prick with a pin he was led to expect—the pressure sense remaining everywhere apparently perfect, as usual.

J. ASHBURTON THOMPSON.

No. 14.

The Chief Medical Inspector to The President, Board of Health.

Nerve Leprosy—H. J. Thompson re-examined.

21 June, 1895.

I RE-EXAMINED this patient yesterday at the Lazarette in company with the Medical Superintendent.

H.J.T.'s general health remains improved above what it was on admission to the extent described in my last note (*see Annual Report for 1894*). His intelligence or quickness also maintains the slight improvement then noted. I got, however, what seemed to me good evidence of the suspected impairment of memory. Reference having been made to extensive grazing of both legs received while bathing from being rolled over by a wave against the rocks, the patient said this happened "about a week ago, I should think"; but the Medical Superintendent said it must have been nearly three months ago, and, at all events, no trace whatever of the injury remained at the time of the present examination. Nor did the patient appear to remember, on being reminded, nor to be satisfied, that it was really so much longer than he had supposed.

The objective signs presented appeared to me to be the following:—The left leg was a little larger than the right, as far as about the ankle joint, and this enlargement was due to varicosity of the deeper veins. The superficial veins were also enlarged and prominent, and from this cause as well. Perhaps, as others, both extremities were markedly bluish from about the middle third of the legs downwards. From the same point downwards on both sides the skin was dry, harsh, shrivelled, and slightly desquamating at several points. It was also discoloured and dirty-looking, although clean. The nails of all toes were perfectly normal. The left leg affords evidence of a fracture during childhood at the junction of the middle and lower thirds. From this point downwards and inwards, as far as the anterior margin of the internal malleolus, a patch of skin extended which was variously discoloured in more or less obscured shades of red, yellow, brown, and blue. It was 3 or 4 inches across at its upper part, quite narrow below. The skin was shiny and thin here and there; at other parts rough, dry, and even desquamating, and normal nowhere. There was a similar but rather smaller patch on the right leg at about the same level, and extending rather less below. Both these patches were mentioned in my earliest description, and I judge they have now the appearance they had then. The metatarsi showed no flattening, and there was no muscular wasting. Over the right ligamentum patellæ were two or three oval and now reddish depressions. The roughened patch of skin present at my first examination, absent four months later, was absent still, and the marks now mentioned had not been before observed. Their appearance caused me to inquire whether he had ever had any blisters there, which he denied. He ascribed the marks to old damage inflicted by kneeling on the knee to use the cross-cut saw. They might be scars of blisters (never looked for before in this situation), temporarily reddened, but I do not think this origin of them can be affirmed, and on the left knee there were no similar signs.

From the right hand the two middle fingers have been amputated at the metacarpal joint. The metacarpus is decidedly flattened, and the interossei are wasted, but the thenar and the hypothenar eminences are either normal or but doubtfully diminished. The forefinger is thickened and cannot be flexed. The distal phalanx has almost quite disappeared by absorption; the nail was normal though curved forwards. The other nails were normal. The left hand, on the whole, was not distinctly abnormal in appearance. The metacarpus was not as firmly or markedly arched as usual, and the dorsal interossei were small. The thenar and hypothenar eminences were either normal or but slightly smaller than might be expected of the hands of a working-man. The skin on the dorsum of both hands was red, and in other respects did not present usual appearances. Still, I could not say that the latter were not such as might be seen after the hand of a working-man had for several months been protected from weather and work. The skin of both forearms was about normal, though slightly rough and harsh at points on the outer and extensor surfaces.

On the skin of the back, over the first dorsal vertebra, at another point towards the left shoulder, and at another point about the eighth rib, there were three rough, red, desquamating patches, about the size of a shilling, over which sensibility to pain (needle-point) seemed normal.

The oricular muscles of the face were under control. The right cubital nerve was decidedly enlarged, and very easily traceable high up the arm. Two or 3 inches above the notch a very slight enlargement could be detected about an inch long. It seemed about normally sensitive, and on pressure sensation was referred downwards to the fingers only. The left cubital nerve was hard, round, and smooth, not easily traceable far above the notch; it was not normal, but not probably abnormally bulky. It seemed about normally sensitive, and communicated downwards to the fingers only. Both perineal nerves were hard, smooth, and round, and could be discovered very easily. Yet they were probably not bulkier than usual. On pressure sensation was referred downwards only, and to the feet. These nerves were not normal.

An injection of pilocarpine was administered by the Medical Superintendent, and the following result was reported by him (on attempting this in my presence a fault was discovered in the syringe, and it was then too late to procure a fresh one):—"His skin did not react after injection of one-tenth of a grain of pilocarpine. After one-fifth of a grain the feet and right hand remained perfectly dry, also the skin over tibia of right foot (leg?). Skin over back and abdomen acted freely, slightly over chest and thighs."

thighs. Fingers of left hand remained dry, but there was a slight moisture over back of hand, more freely over palm. Face and neck, slight action. There was profuse salivation." It is a pity there should be no specific reference to the macular or quasi-macular spots above described.

Signs and symptoms elicited with the patient's aid were as follows; but in reading them it must always be borne in mind, first, that the patient is not mentally acute; secondly, that he has some notions regarding the value ascribed to evidence of loss of sensation in relation to leprosy, while his friends doubt whether he has that disease, and urge his release. Tactile sensibility—Light but firm strokes were drawn on the skin with a well-rounded graphite point; the skin was touched with a loop of stout thread; the point of a needle was lightly but firmly drawn along the skin for an inch at a time; the patient was requested to choose one of four coins of different sizes placed on a deal table; and all these tests were applied out of the patient's sight. All over both feet as high as the ankle-joints he said that he had been touched with the pencil both when he had and when he had not been touched; the dragged point of the needle was felt over the dorsum of both feet and a little way above the ankle-joint, but no conjecture as to the kind of feeling or the instrument by which it was caused could be got from the patient; in the same regions the thread was said to be felt, whether he were touched with it in reality or not. Being desired to select a threepenny bit from a group which included that coin, a sixpence, a shilling, and a penny, with his left hand, he chose the sixpence at the first trial, the threepenny bit at the second; being asked to pick up the threepenny bit placed by itself, he did find it and did pick it up, but both after much searching and fumbling. Localisation—Moderate but distinct prods with the pencil point already mentioned were correctly and promptly localised on the dorsum of both feet, and on all toes examined. Analgesia—At various points on both feet the point of a needle was said to be felt, and "like something sharpish"; blood was drawn several times. The head and point of a pin were variably applied to the same regions, and the blood was sometimes drawn with the latter. The slight blow was always felt. Over the right foot the two were distinguished, sometimes correctly; over the inner side of the dorsum of the left foot and downwards towards the plantar arch they were distinguished apparently correctly; elsewhere on the left foot sometimes correctly, sometimes not. At no point on either foot did either pin or needle cause, as it seemed, sharp pain or any reflex movement; and this contrasted strongly with the result of pricking portions of the back and shoulders—where the spots mentioned above seemed also to have normal sensation. Heat and cold—Tablespoons were taken out of markedly hot and cold waters, dried and applied, all out of the patient's sight. The parts tested were the dorsum of both feet, plantar surfaces of all toes, outer margin of both feet, points on both legs below the knees, dorsum of both hands, over wrist-joints, between the left finger and thumb on the dorsal aspect; the result was that everywhere response was very slow, and everywhere a sensation of heat was reported to both hot and cold touches. Both hot and cold touches were promptly and correctly identified immediately above the patellæ and upwards, and from 3 inches above wrist-joints and upwards; exception, on the inner side of dorsum of left foot towards plantar arch a cold touch was on one occasion correctly named. The back was tested at many points by blowing hot and cold, and perfectly normal sensations were every time promptly reported; the level was not below the scapulæ.

Time did not allow of any further search on that occasion into different modes of sensation; but I noted additionally that there was no ataxy, all limbs remaining perfectly steady except when voluntarily moved; both knee-jerks were normal; there was no apparent muscular wasting, nor paralysis (except as to the former such as is remarked upon above of the metacarpal interossei). No fibrillary tremor could be seen in the muscles of the hands or feet. Walk was apparently normal. Attempts to elicit the superficial plantar reflex resulted in rather prompt withdrawal of the extremity generally.

On the whole, it will be seen that there is no change in Thompson's condition of any moment from what was described at first and subsequently.

J. ASHBURTON THOMPSON,  
Chief Medical Inspector.

### No. 15.

#### The Chief Medical Inspector to The President, Board of Health.

Leprosy Act, 1890.—Report of present state of H.J.T.

6 March, 1896.

I RE-EXAMINED H.J.T. at the Lazaretto yesterday. I have set down below the main points noted in my report dated 21st June, 1895, and have numbered them (1.); underneath each item is the result of the present examination numbered (2.)

- (1.) General health much improved, and good.
- (2.) Improvement maintained; general health good.
- (1.) Memory decidedly bad, judging from a test.
- (2.) Not ascertained.
- (1.) Intelligence or quickness improved since admission.
- (2.) Improvement maintained not advanced upon.
- (1.) Left leg, varicosity of deeper veins; both legs enlargement of superficial veins.
- (2.) The same.
- (1.) Skin of both legs from middle third downwards dry, harsh, &c.
- (2.) Improved, and do not answer to that description. They are both dry, and there is evidence of fine desquamation, not scalliness; the left is the least affected. They are not now bluish.
- (1.) Nails of all toes normal.
- (2.) The same.
- (1.) A macula extending from about old fracture of left leg to the internal malleolus.
- (2.) The macula remains, chiefly of a brown colour now, it does not reach the internal malleolus, but extends in that direction. It is about 3 inches broad at most, perhaps 5 inches long.
- (1.) A similar macula on the right side.
- (2.) Scarcely visible, or even not present.
- (1.) No flattening of the metatarsi.
- (2.) The same; the right foot is a little wasted in comparison with left.
- (1.) The right patella has some oval scars below centre.
- (2.) Scars present, margins uncoloured.

- (1.) There was at first a desquamating reddened patch below the right knee; in June this had disappeared.
- (2.) There is no patch; but its site, or immediate neighbourhood, is anæsthetic.
- (1.) Right hand: the metacarpus flattened, interossei wasted, thenar and hypothenar eminences not distinctly wasted.
- (2.) Metacarpus very markedly (and more) flattened, interossei wasted, thenar eminence markedly wasted, hypothenar scarcely at all.
- (1.) Right index finger: thickened, not easily flexed, distal phalanx nearly absorbed, nail normal.
- (2.) The same, but the joints more fixed; the nail is now diminished in all directions, and is about one-third normal size.
- Additional: the ultimate phalanx of right thumb is undergoing absorption, the thumb consequently tapers; the joint is not fully mobile; the nail is markedly curved both forwards and laterally.
- (1.) Left metacarpus not as much arched as normal.
- (2.) Left metacarpus is now more distinctly flattening.
- (1.) Backs of hands, wrists, and fingers reddened and shiny.
- (2.) The same, but more so; hair nearly gone from central part; it is now quite clear that this state of the skin is abnormal, and not due (as conjectured it might be at first) to weather, &c.
- (1.) Forearms: skin roughened on extensor and outer surfaces.
- (2.) The skin in these situations is rather a little altered and perhaps a little thickened here and there, and very slightly roughened; hair not fallen.
- (1.) Over the first dorsal vertebra, towards the left shoulder, and at about the angle of the eighth rib, left side, three red and rough patches of skin nearly circular.
- (2.) The two latter had either disappeared or had left indecisive evidence behind them; the first was present. The doubtful remains towards left shoulder being pricked were found quite anæsthetic (this was done quite unexpectedly by the patient, and before his attention had been drawn to this kind of examination; his face being watched by another, it was plain he was unaware that he had been pricked—cuticle penetrated).
- (1.) Sensation in the above patches apparently normal.
- (2.) See above.
- (1.) Orbicular muscles normal.
- (2.) Orbiculars (of eyes) normal.
- (1.) Right cubital: decidedly enlarged; slight local swelling above the notch.
- (2.) The same.
- (1.) Left cubital: small, not easily traceable upwards.
- (2.) About the same; not easy to follow above the notch.
- (1.) Both peroneals hard, round, and smooth.
- (2.) The right peroneal much smaller than the left; the left hard, round, and smooth.
- (1.) Pilocarpine: Dr. Sawkins, October, 1894; 1-6th; moderate sweating; both hands and both feet absolutely dry; back of right forearm, and right wrist; scaly patches on either shin (since disappeared) and below right knee, remained dry. Dr. Taylor, 22nd June, 1895; 1-5th; feet and right hand dry, also skin over tibia of right foot (leg?); fingers of left hand remained dry, but slight moisture over back of hand, more freely over palm. Face and neck slight.
- (2.) 1-4th; right hand, and a triangular portion of skin on posterior aspect of forearm as wide as the wrist-joint at the bottom, apex about 6 inches above it, remained absolutely dry; the left hand sweated quite slightly, the first phalanges less, the second and third less still; right foot remained dry, the left had very moderate moisture; the spot over first dorsal vertebra sweated less than surrounding skin; another spot about the 12th dorsal made appearance under pilocarpine, and sweated less than surrounding skin.

From my report of 21st June, the difficulties thrown by this patient in the way of tests applied to sensation are apparent, and he still answered rather what he thought would testify to a normal state than what he really experienced. In the case of the shoulder macula, already mentioned, and in that of a site of a former macula below the right knee, I got quite trustworthy indications; so also I did during examination of the feet. But at whatever apparently abnormal part he was pricked, though he sometimes correctly spoke of the pin-point, yet it was quite clear that he nowhere received the sharp impression of pain he should have received—that is, he remained perfectly quiescent when pricked at those spots, and merely spoke of “something sharpish,” though he flinched in a normal way when much more slightly pricked on probably healthy areas. On this occasion he showed where he had been touched when he had not been touched at all, just as he did last time, and it is worth while to remember the note made in the last Appendix—that, being touched with the finger on the left foot, he flinched as though he had received the prick with a pin he had been led to expect.

The general outcome of the above notes shows that H.J.T. remains in the same state described last June, and there has been the improvement in general health usually (or often) observed in lepers after admission under regular dieting and treatment; some improvement in minor local respects, such as is common in a disease whose manifestations are subject to fluctuations, and advance in the trophic affection in the right hand, as well as increased (or at all events now manifest) wasting of the muscles of the left. Lastly, and merely for the sake of form, I reaffirm the opinion originally expressed by me on 5th October, 1894.

J. ASHBURTON THOMPSON,  
Chief Medical Inspector.

Read, meeting of the Board of Health held this day, 10th March, 1896. Directed that the President should frame a reply and submit it to the next meeting. He was desired to state the position in some such terms as these:—“Dr. Taylor was admonished because he did not, with sufficient promptitude and in accordance with law, report a case of leprosy which was in his charge. In his defence he has imported, very improperly, matters to which he has no business to refer. He actually accuses the Board of having overlooked his reports concerning the two lepers to whom he refers. He has done this without proper knowledge, and with great impropriety, because the Board had arrived at its decisions after full and careful consideration.” The President was further desired to append descriptive notes of the two cases in question, written briefly and concisely. The papers were directed to be again circulated in the meantime.—C.A.S.

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No. 16.

The Principal Under Secretary to Professor Anderson Stuart.

My dear Sir, Chief Secretary's Office, Sydney, 16 March, 1896.  
Mr. Brunker would like to see you at 11 o'clock a.m. to-morrow, relative to the case of Dr. Taylor, Medical Superintendent of the Coast Hospital, Little Bay.

Yours, &c.,  
CRITCHETT WALKER,  
Principal Under Secretary.

I waited on Mr. Brunker, as requested, but was unable to see him, and have not yet been able to see him.—A.S., 19/3/96.

No. 17.

Professor Anderson Stuart to The Principal Under Secretary.

Board of Health Offices, 127, Macquarie-street, Sydney, 19 March, 1896.  
IN reply to the minute of the Chief Secretary of the 17th March, 1896, I beg to recommend that a letter be addressed to Mr. Taylor conveying to that gentleman the Chief Secretary's opinion as expressed in that minute.

At the request of the Board of Health, I also transmit herewith for the Chief Secretary's information a statement of the cases of two lepers, Georgie Yaw (a Chinaman) and H.J.T. (a native of this Colony), which was adopted by the Board on the 17th instant.

A.S.

BRIEF statement of the Board's position in regard to Georgie Yaw and H.J.T., at present confined in the Lazaretto.—Adopted by the Board at a meeting held on the 17th March, 1896.

GEORGIE YAW is a Chinese leper, who, if liberated from the Lazaretto, would be unable to maintain himself. He would therefore have to go to an asylum for the destitute, where his presence would probably cause much trouble to every one around him and much misery to himself. The law contemplates that a leper certified as such (as Georgie Yaw has been) shall be detained at the Lazaretto, unless his means are such that he can be duly and properly isolated elsewhere, which clearly is not the case with this man. He is therefore legally detained at the Lazaretto, and, besides, that probably is also the manner in which the greatest amount of comfort can be obtained in the Colony for him.

H.J.T. is a leper legally detained at the Lazaretto. Owing to representations made by various members of his family, the Board made careful inquiries into his condition, and the Board's officers had many interviews with members of his family, and as a result it was found that their circumstances entirely prevented him being maintained by his family, and from his condition he certainly would be unable to maintain them if released from the Lazaretto and detained in any place which might, in accordance with the law, be proclaimed a private lazaretto. As a matter of fact, representations were made to the Colonial Secretary, as the result of which a weekly allowance was made to his family, so poor were they. There is no doubt at all that the Lazaretto is the most suitable place for him. As illustrating the difficulties which a man in his position would meet if released from the Lazaretto, it might be mentioned that it has been reported that the mere rumour in the district where they lived of their father being a leper was sufficient to lead to the exclusion of the members of his family from such employment as had hitherto been open to them.

From this statement it will be seen that Mr. Taylor is in error in supposing that the Board had ignored his reports concerning Georgie Yaw and H.J.T. The action taken by the Board in both cases was in accordance with law, after careful deliberation and minute inquiry into the circumstances.

Moreover, the Board cannot refrain from expressing the opinion that Mr. Taylor has acted improperly in importing these two cases as new matter into the consideration of a perfectly distinct subject, viz., the action of the Board in directing him to be admonished for failing to obey the law by not reporting with sufficient promptitude a case of leprosy which had come under his observation in the Coast Hospital.

A. STUART,  
President.

The Principal Under Secretary to The Medical Superintendent of the Coast Hospital, Little Bay.

Sir, Chief Secretary's Office, Sydney, 24 March, 1896.

With reference to your letter of the 7th ultimo, submitting a report explanatory of your conduct in relation to the case of one Timothy O'Rourke who died in the Coast Hospital, Little Bay, on the 9th November last, I am now directed to inform you that after carefully reviewing the whole of the circumstances, the Chief Secretary considers that you are deserving of censure in not promptly reporting the fact to the proper authorities that the deceased was suffering from leprosy, and in improperly importing into your defence matters to which you had no business to advert.

I have, &c.,  
CRITCHETT WALKER,  
Principal Under Secretary.

No. 18.

The Editor, *Australasian Medical Gazette*, to The President, Board of Health.

Dear Professor Stuart, 16, College-street, Sydney, 6 May, 1896.

At a Council meeting held last night (Tuesday, 5th) a resolution was passed directing the editor of the *Australasian Medical Gazette* to publish, in the next issue of that journal, Dr. Taylor's case of leprosy. This paper is a clinical report of a case of leprosy treated by Dr. Taylor at Little Bay Hospital,

Hospital, but it is not accompanied by any particulars concerning the *post-mortem* examination. Should it not be against the rules of your Department, I would like very much to receive from your pathologist some particulars regarding the *post-mortem* examination, which might possibly render the case more complete, and of higher scientific interest.

Thanking you in anticipation.

Believe me, &c.,

SAMUEL T. KNAGGS,

Editor, *A.M. Gazette*.

Let any *post-mortem* notes on this case be forwarded to Dr. Knaggs. Ask authority.—A.S., 7/5/96.  
Done.—C.A.S.

## No. 19.

### Newspaper Extracts.

[From the *Daily Telegraph*, 7th May, 1896.]

#### THE LEPERS AT LITTLE BAY—AN ALLEGED HEALTHY PATIENT—NEW LEGISLATION REQUIRED.

A DIFFERENCE of opinion between medical men, between whom at times differences of opinion regarding cases do occur, has called attention to the apparently unsatisfactory conditions of the Leprosy Act, especially in regard to the detention of people confined as lepers, but who may be considered by medical men, other than those who certified to their being diseased, not to be lepers at all. A correspondent, who is a medical man, writes stating that there are at present two men at the Little Bay Lazarette whom Dr. Taylor, the Medical Superintendent, considers to be in a condition which should exempt them from this deprivation of their liberty, as, in his opinion, they are not afflicted with leprosy, although they were certified to be so diseased when sent into confinement. It is further stated that representations to this effect have frequently been made by Dr. Taylor to the Minister in whose Department this institution is, as well as to the Board of Health, but without effect, so far as securing the release of the men is concerned.

From inquiries made yesterday it would seem that the complainant has grounds for stating that, at any rate, one of these supposed lepers is considered by the Medical Superintendent of the Lazarette to be a person who should be liberated. It is understood that Dr. Taylor has reported respecting this man that there is not the remotest probability of his ever having been a leper. None of the symptoms of the disease, it is alleged, can be discerned in his case, and that he is not a leper is further substantiated by the fact that since he was taken to Little Bay he has put on flesh, being now described as stout, and that his general health also has improved. The other man, it is alleged, is suffering from nerve leprosy, which differs from the virulent form of the disease, and that this man also might safely be released.

Commenting on this assumed set of facts, our correspondent remarks that it is evident that the Leprosy Act is extremely defective, and that it requires immediate attention, being without effectual safeguards, and comparing unfavourably with our carefully drawn up Lunacy Acts. By the provisions of the lunacy law, in ordinary cases, before a lunatic can be confined, a request, authenticated by a Justice or Minister of religion, accompanied by two medical certificates, is required. For patients, when confined, there is an Inspector-General, and there are also two official visitors, one of whom must be a medical practitioner. The visitors must make visits at least once a month, with or without notice. Both these and the Inspector-General can recommend the discharge of patients. A Judge of the Supreme Court can order inquiry into the case of any confined person alleged to be sane, and order his release on result of inquiry. A Judge can also direct inquiry into the care and treatment of a patient. For obviously wise reasons, the Inspector-General and the official visitors are legally debarred from certifying any free person as a lunatic. It is evident that all these precautions were made because proved necessary to prevent abuse.

As to our present Leprosy Act, it provides that immediately on any case of leprosy appearing the medical attendant and the householder shall report it. The practice, then, is for the Board of Health to get two practitioners to examine, and if they consider it leprosy to certify. If they concur, a warrant is made out, and the patient conveyed to the Lazarette. No legal provision is made for appeal on the part of the patient, and none for discharge, under any circumstances. Once in the Lazarette he can do nothing, and is there for life, and can be subjected to neglect or cruelty by his attendants without hope of redress unless he has political influence or power to bribe.

Our correspondent remarks that a new Leprosy Act should contain safeguards and rules of procedure on the general plan of the Lunacy Acts. After notification, two physicians of wide clinical experience should be selected to report on the case, and should be well paid, as experts. Reasonable right of appeal should be given to the patient. The Lazarette should be subject to regular inspection by physicians debarred from signing leprosy certificates, and these visitors should have powers equal to those under the Lunacy Act. Patients should have right of appeal to a Judge, who should have power to direct inquiry into alleged abuses. Provision for legal discipline within the Lazarette should be made. At present it seems that a patient can commit an offence on another with impunity. A leper can scarcely be sent out of the Lazarette to gaol. There is no provision at present for criminal or insane lepers. Provision should be made for lepers required as witnesses, plaintiffs, or defendants in Courts of law, or who may be acting as trustees. Provision should also be made for medical or surgical consultation in difficult cases of illness. Proper legal provision should be taken to provide sustenance for the wives and families of lepers. At present the bread-winner is torn from his family for no fault of his own, and shut up in a lazarette for the sole benefit of the public; meanwhile his wretched family must beg, steal, or starve. Provision should also be made for keeping up existing insurance policies on the lives of lepers. It should be clearly understood that lepers are not criminals or, properly, paupers, but, within the Lazarette, free men, isolated for the good of their fellows, and they should be treated in the most liberal way, and every possible compensation given them.

It would be interesting, our correspondent adds, to know whether lepers are entitled to the franchise or not. If they are, he says that they might claim it, and their votes would have to be taken. Provision in a new Act should be made for allowing the exit of a patient from the Colony, should he so desire. It might be desirable and economical to offer to pay their passage-money, and a small pension, especially in the case of Chinese. It should be made illegal for a known leper to land as an immigrant to the Colony.

He also thinks that the general question of leprosy isolation should be to some extent raised. Isolation is certainly necessary in nodular lepers when ulceration has begun. Before this takes place there can scarcely be any appreciable shedding of leprosy bacilli, and if the patient is to be isolated the precautions may be a little less strict than later on. He states that it is rather difficult to see how "nerve lepers," as they are called, can be any serious danger to the community. This is a question for medical men, but it shows that some discretion as regards isolation and its extent might, perhaps, be allowed in the administration of the Act. It should also be remembered, he adds, that in some patients the leprosy dies out, leaving them "cured" so far as the leprosy goes, though maimed by its ravages.

In connection with this matter it may be stated that many medical men are of opinion that numerous cases of leprosy exist amongst us which have escaped detection. A remarkable incident which occurred several years ago, when the Coast Hospital was being used for typhoid patients, is mentioned in confirmation of this belief. Two of the patients who were being treated for typhoid were found to be in a leprosy condition. A third man, who called at the institution to inquire about one of them, was observed by the medical officers to be a leper also, and he had the disease in a very bad form. All three were afterwards confined to the Lazarette.

[From the *Evening News*, 6th May, 1896.]

ALLEGED LEPROSY SCANDAL AND DEFECTS IN THE LEPROSY ACT.

To the Editor of the *Evening News*.

SIR,—There are some very definite rumors published in the *Evening News* that a great scandal exists at the Leper Lazarette, in that two men alleged not to be lepers are confined there, and that this has been repeatedly brought under the notice of the authorities by Dr. Taylor, the Medical Superintendent. Now, Dr. Taylor is well known as an expert and scientific investigator in the subject of leprosy, and to have probably a closer experience of that disease than any other medical man in Australia. If it be true that no notice has been taken of his repeated reports the neglect is most culpable, and there is urgent call for inquiry. It is certainly necessary to sift the whole matter thoroughly. It is evident that the Leprosy Act is extremely defective, requiring immediate attention. It is totally without effectual safeguards, and compares most unfavourably with our carefully drawn up Lunacy Acts. By the provisions of the lunacy law, in ordinary cases, before a lunatic can be confined, a request, authenticated by a Justice or Minister of religion, accompanied by two medical certificates of insanity, is required. For patients when confined there is an Inspector-General and also two official visitors, one of whom must be a medical practitioner. The visitors must make visits at least once a month, with or without notice. Both these and the Inspector-General can recommend the discharge of patients. A Judge of the Supreme Court can order inquiry into the case of any confined person alleged to be sane, and order his release on result of inquiry. A Judge can also direct inquiry into care and treatment of a patient. For obviously wise reasons the Inspector-General and the official visitors are legally debarred from the power of certifying any free person as a lunatic. It is evident that all these precautions were made because proved necessary to prevent abuse. Now let us consider our present Leprosy Act. It provides that immediately on any case of leprosy appearing the medical attendant and the householder shall report it. The practice then is for the Board of Health to get two practitioners, one of whom is Dr. Ashburton Thompson, to examine and, if they consider it leprosy, to certify. If they concur, a warrant is made out and the patient conveyed to the Lazarette. No legal provision is made for appeal on the patient's behalf, and none for discharge, under any consideration. Once in the Lazarette he can do nothing, and is there for life, and can be subjected to neglect or cruelty by his attendants or others without hope of redress, unless he has political influence or power to bribe. In my opinion a new Leprosy Act should contain safeguards and rules of procedure on the general plan of the Lunacy Acts. After notification, two physicians of wide clinical experience should be selected to report on the case, and should be well paid, as experts. Reasonable right of appeal should be given to the patient. The Lazarette should be subject to regular inspection by physicians debarred from the power of signing leprosy certificates, and those visitors should have powers equal to those under the Lunacy Acts. Patients should have a right of appeal to a Judge, who should have power to direct inquiry into alleged abuses. Provision for legal discipline within the Lazarette should be made. At present it seems that a patient can commit an offence on another with impunity. A leper can scarcely be sent out of the Lazarette to gaol. There is no provision for criminal or insane lepers. Provision should be made for lepers required as witnesses, plaintiffs, or defendants in Courts of law, or who may be acting as trustees. Provision should also be made for medical or surgical consultation in difficult cases of illness. Proper legal provision should be taken to provide sustenance for the wives and families of lepers. At present the breadwinner is torn from his family for no fault of his own, and shut up in a lazarette for the sole benefit of the public. Meanwhile his wretched family must beg or starve. They are more humane than this, I believe, at Molokai, in the Sandwich Islands. Provision should also be made for keeping up insurance policies on the lives of lepers who possess them. It should be clearly understood that lepers are not criminals, and not paupers, but, within the Lazarette, free men, isolated for the good of their fellows, and they should be treated in the most liberal way, and every possible compensation given to them. It would be interesting to know whether lepers are entitled to the franchise or not. If they are, they might claim it, and their votes would have to be taken. Provision in a new Act should be taken for the exit of a patient from the Colony, should he so desire it. It might be desirable and economical to offer to pay their passage money and a small pension, especially in the case of Chinese. It should also be made impossible for a known leper to land from a vessel as an immigrant to the Colony. I also certainly think that the general question of leprosy isolation should be to some extent raised. Isolation is certainly necessary in nodular lepers when ulceration has begun. Before this takes place there can be no shedding of leprosy bacilli; and, if the patient is to be isolated, it does not require such strict precautions as later on. Also, it is somewhat difficult to see how "nerve lepers," as they are called, can be any serious danger to the community. Of course, this is a question for medical men, but it shows that some discretion as regards isolation and its extent might perhaps be allowed in the administration of the Act. It should also be remembered that in some patients the leprosy dies out, leaving them "cured" so far as the leprosy goes, though maimed by its ravages. Commending my remarks to the serious consideration of the public.

Yours, &c.,

PHYSICIAN.

[From

[From the Daily Telegraph, 21st April, 1896.]

LEPROSY.—THE CASE OF THE CHINESE GARDENER.

To the Editor.

SIR,—Under this heading a statement appeared in to-day's issue of the *Daily Telegraph* from Professor Anderson Stuart, which calls for comment. Dr. Stuart evidently feels that some explanation or excuse is required to sustain his action in causing the public arrest of this unfortunate man—an arrest which necessitated his being chased through the streets of the city as if he were a criminal, and carried off to the Coast Hospital, in spite of his violent protests and resistance. The extraordinary justification advanced by Professor Stuart, to the minds of unprejudiced people, is no justification at all, but the reverse. He says, "It has now been definitely ascertained that the man has the disease known as psoriasis. . . . this complaint sometimes requires close observation to distinguish it from leprosy." But, sir, it must be well known to Professor Stuart that the Leprosy Act gives him no power whatever to arrest a man for purposes of observation, or on mere suspicion, and now that these suspicions prove to be quite unfounded, I ask,—Who is to compensate this poor fellow for the loss of his liberty and the ruin of his business? If such action is passed over without condemnation, no person who may suffer from any common and innocent skin affection can consider himself safe. It must be remembered, too, that while the Leprosy—like the Lunacy—Act requires a certificate from two medical men before the patient can be interned, it provides none of the checks and safeguards of the latter against errors on the part of the certifiers. Under the Lunacy Act there is subsequent periodic inspections and examinations of the patients by competent independent visitors, medical and lay, the former being expressly debarred from certifying in the first instance, so that they may be absolutely unbiased. The Leprosy Act contains no such wise provision, and therefore once a patient is incarcerated in the Lazarette there is no appeal for him or her, except to the man who has originally certified that he or she is a leper. Professor Stuart acknowledges that a mistake has been made in this case. Is it not possible that in other instances the mistake may have proceeded further, and that in the absence of this independent inspection some one or more unfortunates may be now dragging out their days in the most horrible of all prisons—a lazarette—exposed, too, to the risk of eventually really contracting the disease?

On several occasions, if I mistake not, the President of the Board of Health has urged the advisability of an Act to render compulsory the notification of all kinds of infectious diseases, but with the warning before us of the disposition of the President of the Board to autocratic and inconsiderate action, the public will do well to pause before entrusting this gentleman with powers which may be used in a tyrannical and oppressive manner.

Yours, &c.,

Sydney, 17th April.

NAAMAN.

The President of the Board of Health (Professor Anderson Stuart), when seen yesterday, stated "that this man never was at the Lazarette at any time as a leper, and that he was not arrested at the instance of the Board of Health. The chief medical officer saw the man, and reported that he was in such a miserable condition that it would be a charity if he could be taken to the hospital and treated for his disease, whatever it was, and pointed out that during that time he would, of course, be under observation. After being at the hospital for a few days the man, or his friends, wished to get him out, and he was allowed to leave in the ordinary course of events. When the ambulance was sent for the man the driver was instructed to apply to the policeman who had the case in hand, because he alone knew where the man was to be found. Anything that may have been done by the police authorities after that was their own action, and was certainly not done at the instance of the Board of Health."

[From the Evening News, 16th April, 1896.]

AUSTRALIAN FREEDOM.

To the Editor of the Evening News.

SIR,—I notice in the papers of to-day a report of the "capture" (!!) of a "supposed leper," who was publicly arrested in Sydney by the police, conveyed as a common criminal to the police-station, confined there, and afterwards thrust into an ambulance and taken against his will to the Coast Hospital, where, I suppose, he is still confined. Now, I would like to know by what authority this man was thus outrageously deprived of his liberty in defiance of the law of the land. Do we live in Russia or in a free British colony? Under the Leprosy Act of New South Wales it is lawful to confine a man in the Lazarette after he has been duly certified as a leper by two suitable medical practitioners. But here we have a man, not certified as a leper, arrested without notice, torn from his business, and this, according to one newspaper, after most violent resistance, thrust into durance, and kept so at the pleasure of some unknown autocrat, apparently to wait for the slow development of symptoms which may enable him at length to be certified and confined in the Lazarette. If such symptoms do not appear, he is nevertheless to be confined at the Coast Hospital. He can no more be legally detained there for an hour than for life. Perhaps he is to be kept there for life. Who knows? But the case is indeed far worse than this. We are told that the man is not considered to be a leper, but that he is suffering from another disease—psoriasis. This, too, was well known, as we learn that Dr. Ashburton Thompson examined him a fortnight ago. The law enacts that a case suspected to be one of leprosy must be reported without loss of time. Dr. Thompson, however, cannot have considered it suspicious of leprosy, or a fortnight would not have been allowed to elapse in the face of the Act before dealing with the case. On the other hand, Dr. Thompson is reported to have called it psoriasis. Nevertheless, this unfortunate sufferer was pounced on and dragged off by his gaolers to the police-station, and imprisoned for the crime of having psoriasis, and is, I suppose, still illegally imprisoned for the same. Was any more abominably disgraceful act than this ever perpetrated in the history of New South Wales? Nowhere else, save in Russia, would anyone dare to commit such an atrocious outrage on liberty. Who is safe? No wonder he violently resisted. Will he be charged at the Police Court with resisting a policeman in the execution of his duty (*sic*)? I sincerely hope he will take legal action—firstly, to get his liberty; secondly, to get substantial damages for the injury to his liberty; and thirdly, to teach a much-needed lesson to those responsible.

Yours, &c.,

10th April, 1896.

HABEAS CORPUS.

[From

[From the *Daily Telegraph*, 8th May, 1896.]

LEPROSY ADMINISTRATION.

THE statements published by us yesterday regarding the Little Bay Lazaretto and the need for reform in legislation affecting lepers are such as demand inquiry. Furnished as they were by a medical man who does not speak from hearsay, and who must be assumed to have more knowledge of the subject dealt with than anybody outside the profession, they embody allegations which cannot be ignored. It was asserted that there are now in the Little Bay Hospital, under detention as lepers, two persons who are not afflicted with the terrible disease. It was also said that representations to this effect have been unavailingly made, in the case of one of these patients at least, by the Medical Superintendent of the Institution to the Minister in whose Department it is, and to the Board of Health. If the facts are as thus represented, very grave injustice is being done. Not only are two persons, for whose isolation from the rest of the community there is no warrant, incarcerated and prevented, to their own injury and that of anybody who might have been dependent upon them, from following any occupation, but they are subjected to a fearful risk. The purpose of removing lepers from among people unattainted with the most shocking of maladies is to prevent the spread of it by contagion. There is much difference of opinion among medical authorities regarding the conditions under which leprosy may be communicated; but it can hardly be doubted that the most likely place in which to become affected is an hospital devoted to the care of those already afflicted. Quite apart from the other wrongs involved in laying hands upon a man under wrongful suspicion of leprosy, and depriving him of liberty, there is, therefore, the greater wrong of exposing him to special danger of becoming a leper. This is obviously a matter on which the utmost caution should be exercised by those acting under the provisions of the Leprosy Act for the preservation of public health. As the Act stands, it is pointed out, no means exist for the release, or even for the removal from among diseased persons, of anybody incarcerated as a leper, and afterwards found to be clean in the legal sense. It is hardly believable, though, that unless the fullest assurance possible to science had not been received by those in authority that the persons referred to were leprous, and therefore a source of danger to the community if liberated, something would have been done towards causing their release. It would not surely have been very difficult in a matter of so much urgency to have moved Parliament to accept such an alteration in the Act as would convey any power required.

The need for an alteration in the Leprosy Act which would give the authorities power as far as possible to remedy mistakes made does not depend upon whether the facts in this matter are as alleged. Our informant, in referring to the existing law, shows that persons charged with lunacy have much better safeguards against wrongful detention than have those who are taken under control as lepers. It could not lessen the security of the public if persons suspected of physical unfitness to be at large were given as full an opportunity of proving the contrary as have persons supposed to be of unsound mind. It will certainly not be thought the best possible arrangement for the safety of the suspect, whose well-being is as important a matter as that of any other member of the community, that, on the verdict of two medical men, he should be branded as a leper and removed to a lazaretto without an opportunity of appeal. From the fortunate circumstance that it is a disease of comparatively rare occurrence among us, leprosy is not so well understood by medical men, generally speaking, as are most other maladies. And, considering how often we see the widest divergence of opinion among them regarding questions of diagnosis or treatment, the fact that two are found to agree upon the nature of the disease seems hardly a reason why that should practically be an end of the matter. The most important phase of the questions raised by our informant concerning leprosy administration is this of the safety of the individual as against the community. But there are others indicated which seem to call for remedial legislation. If, as is stated, there is no provision made for the punishment of persons within the Lazaretto who may assault others, a fresh horror is added to that undesirable place, especially for anybody wrongfully detained there. And it is hardly conceivable that a leper who had broken the law would be dealt with in the ordinary manner by the usual processes, and admitted to gaol among uncontaminated prisoners. There are other features of the present law and administration referred to which are well worthy of being considered by Parliament with a view to their reform. Whether or not the allegations made are all true, it is sure that a full inquiry into them would do much to remove doubts from the public mind as to how lepers are dealt with—doubts which may exist both on the ground of public policy and that of humanity.

THE LEPEBS AT LITTLE BAY.—ACTION OF THE BOARD OF HEALTH.

IN yesterday's issue of the *The Daily Telegraph* there were published the essential portions of a communication from a medical man regarding the position of some of the patients at the Little Bay Lazaretto. It was stated that Dr. Taylor, the Medical Superintendent of the Institution, had reported to the Minister in charge of the Health Department, as well as to the Board of Health, that one, if not two, of the patients at Little Bay was not in such a condition of health as to necessitate his further detention, and that the representations by Dr. Taylor had been ineffectual, the men, despite this report, being still confined at the station. From inquiries made yesterday it would seem that Dr. Taylor reported on several different occasions regarding the condition of one of the men, whom he is convinced is not really a leper, and should therefore be released. The medical officers by whose advice the Board of Health acts in these matters, however, take a different view from that taken by Dr. Taylor, they certifying that both of the men whose leprosy the Superintendent questioned were suffering from the disease in a contagious form. The difficulty which arose from the doctors differing so absolutely had to be decided by the Board of Health. It appears, from inquiries made at the Health Office yesterday, that the Board thoroughly investigated the matter. Indeed, a large file of correspondence on the subject was exhibited to the reporter who sought information on the subject, as the result of the investigations which the Board had made before coming to a decision. The decision which it arrived at was against the view taken by Dr. Taylor, and the men consequently continue to reside at Little Bay. It is understood that the difference of opinion regarding one of the patients turns on the question whether nerve leprosy is contagious.

On this point the Health authorities hold a very positive opinion that it is contagious. The difference between nerve leprosy and skin leprosy, it was explained, is that in the former the bacillus confines its action to the nerves, and is, therefore, more difficult to discover. But that the organism is present in cases of nerve leprosy has been demonstrated in Sydney by the discovery of the bacillus also in the skin in this form of the disease. The difference in the contagious properties of nerve leprosy and skin leprosy

leprosy is, therefore, considered to be solely one of degree, both being contagious, though the nerve variety being less so than the other. Another point taken in our correspondent's letter was that the existing law was defective in respect to the provisions under which a patient might be released. It was necessary, it was alleged, that the same two physicians who certified that the subject was diseased should certify that he was not, otherwise he could not be released. The certificate of any other two medical men, our correspondent stated, would not suffice. This, however, is not a correct reading of the law; all that the Leprosy Act provides on this matter being that the Health Board should satisfy itself regarding a patient's condition. The manner or method by which the Board should satisfy itself upon this subject is left wholly to its own discretion. But upon this question the Board disclaims the malevolence implied in a charge of detaining a man in the Lazarette when he is really not a leper. The Board has no personal interest to serve in thus imprisoning a man if he is not diseased. Its sole concern is the public safety, and when once a man has been certified to be a leper it has to be very certain that he is not before he can, or should be released. As a matter of fact, those patients in whom the virulence of the disease has exhausted itself, are released as soon as it is known for certain that the danger of contagion is past; for, although the disease is one which cannot be cured by the application of any known treatment, yet nature itself in some instances overcomes the affliction, and in those cases the patients may be spoken of as having recovered. In no case does the Board ever detain a man in whom a recovery is properly authenticated.

[From the *Daily Telegraph*, 9th May, 1896.]

#### THE LEPROSY ACT AND ITS ADMINISTRATION.

To the Editor.

SIR,—In to-day's *Daily Telegraph* is a rejoinder, not an answer, from the authorities of the Board of Health, to a letter of mine on leprosy matters. I venture to say that it is a most inaccurate, misleading, and unsatisfactory one. I make certain strictures on the Leprosy Act and its administration, and the Health authorities, unable to refute these, make a number of totally irrelevant statements, and, indeed, show the utter weakness of their position by setting up an altogether new accusation, attributing it to me, and then saying that it is "not a correct reading of the law." This method of meeting arguments is many centuries old. Indeed, it is rotten with age; and the Health authorities should not rely on such sorry weapons. I certainly said that a new leprosy law should be assimilated to the lunacy law in providing for official visitors possessing the power of recommending the discharge of patients, and debarred from the power of committing free persons to the Lazarette as lepers by certifying. And I adhere to this opinion.

With your permission, I will now proceed to quote the statements of the Health authorities, and criticise them. We read—"The medical officers by whose advice the Board of Health acts in these matters, however, take a different view from that taken by Dr. Taylor, they certifying that both of the men whose leprosy the Superintendent questioned were suffering from the disease in a contagious form. The difficulty which arose from the doctors differing so absolutely had to be decided by the Board of Health." It is now ten months since Dr. Taylor first raised the question. Now, sir, will the Health authorities state whether any notice whatever was taken of Dr. Taylor's report ten months ago? Will they state whether Dr. Taylor has ever been called on, from that day to this, to give his reasons for making such report? Will they please give the dates, if any? Again, will the Health authorities give the date on which "the medical officers by whose advice the Board of Health acts," were requested, if at all, to report? And, further, will the Board of Health state the names of the same medical officers who "certified that both the patients whose leprosy the Superintendent questioned had leprosy in a contagious form"? Will they state the dates on which the patients were examined, and the reports sent in? And what was the date on which the Board was called on to decide the difficulty of conflicting medical opinion? These are fair questions, and if the facts are as the authorities allege they can be easily answered, and in a categorical manner.

We are told that the Board "thoroughly investigated the matter." I beg leave to ask when and where did the "thorough investigation" take place. I maintain that in a case of such extreme gravity, in which a man of large and special experience states that one patient is clearly not a leper at all, and that another has symptoms very decidedly less marked than those of other patients who have been specially examined, and not certified from lack of sufficient evidence of leprosy, I maintain, I say, that nothing short of a very serious reconsideration of the whole case, and the commissioning of additional experienced consultants, can be demanded or accepted, and the reasons, in full, of the Medical Superintendent should be, and should have been called for. Next, "a large pile of correspondence on the subject was exhibited to the reporter." I do not observe that it was given to the reporter to read. I go on to say that the Health authorities dare not publish the correspondence in any professional journal. Again, "it is understood that the difference of opinion regarding one of the patients turns on the question whether nerve leprosy is contagious?" Allow me to remark that it is not so "understood" at all, and that it does not turn on the question whether nerve leprosy is contagious. The real question at issue has been categorically stated above. There are several other nerve lepers in the Lazarette, and their case was not mentioned. The present law enacts that isolation shall be enforced without any exceptions, and the Board has no power to discharge a nerve leper, however unnecessary, antiquated, and cruel the law.

I will now go a little further into the subject of nerve leprosy. We are told that "on this point the Health authorities hold a very positive opinion that it is contagious." We are also told, as if it were a sort of discovery, the honor of which belongs to some authority in Sydney, that the presence of the leprosy bacillus has been demonstrated in the skin of nerve lepers. I was certainly somewhat astonished to hear that this seemed to be considered by the Health authorities as something new. I recommend the authorities to read some of the modern literature of leprosy. They will then discover that the presence of leprosy bacilli in the skin of nerve lepers was, at any rate, well known to others. It was certainly well known to me. But, notwithstanding this, I stated not only that it was difficult to see how nerve lepers could be a serious danger to the community, but also that the question whether nodular lepers, before ulceration, required strict segregation was worthy of careful consideration. The columns of a lay journal are scarcely a suitable place for the discussion of a medical question like this, but I adhere to my position, and

and am perfectly ready to give ample reasons for it, if called on. I also venture to remark to the Health authorities that if they persist in holding, with regard to nerve leprosy, "a very positive opinion that it is contagious," demanding segregation in a lazarette, in opposition to the direct and indirect teaching of all modern authority, that they should justify themselves by proceeding to prove their position, which I know they cannot do.

Yours, &c.,

8th May.

PHYSICIAN.

In the official statement which has been made on behalf of the Board of Health in connection with the administration of the Leprosy Act there is a discrepancy which unfortunately occurs at a vital stage of the statement. The allegation was that two persons are being detained in the Lazarette who are not lepers. The Board replies that that is not so. Then it becomes a fair question—How does the Board know? And the answer is that the medical officers, by whose advice the Board acts in these matters, report that the two men have leprosy in a contagious form; and that as "all that the Leprosy Act provides is that the Health Board should satisfy itself regarding a patient's condition," there is an end of the whole subject. But that end is not so acceptable unofficially. The authority for saying that these two men are not afflicted with leprosy, or with contagious leprosy, is that of the Medical Superintendent of the Lazarette, who has been in charge of the lepers for some time, and who has presumably acquired an amount of leprosy knowledge in actual experience which very few doctors indeed have. As against his evidence is simply that of other physicians who may or may not know as much about the disease as the Superintendent does, but who certainly have not had his opportunities of daily observation of the disease and those who suffer from it, and who, above all, may be those who originally certified that the questioned men were lepers. In that case they may either have reported that their original diagnosis was correct, or adhered to it because their experience and opinions are what they were when they first reported. If this is so, it may be said without any disrespect to the Board's medical advisers that their report is not enough. The Board is said to have men incarcerated in the Lazarette who ought not to be there, and there is a conflict of opinion between its Medical Superintendent and its medical advisers. The only satisfactory way of disproving the statement is by taking the advice of physicians who are neither connected with the Board nor with the Little Bay Hospital.

#### No. 20.

#### Leprosy Histopathology—T.O'R.—Eight figures.

**Necropsy**, thirty hours after death. Specimens forwarded to the Laboratory by the Medical Superintendent of the Coast Hospital. Skin, ulnar nerve, popliteal nerve, spleen, and testis were examined. *Skin, portion of a tubercular nodule in eyebrow.* Epidermis, hair follicles, and sebaceous glands normal in structure. Cells of rete contain a small amount of pigment. Corium thickened, papillary layer obliterated, the line between dermis and epidermis being flattened out. The corium is extensively infiltrated with cellular elements. These consist of round, oval, and irregularly-shaped cells, each containing a single nucleus or occasionally two, but multinucleated masses ("lepra cells") were not seen. The cells occur in all parts of the corium dissociating the fibrous tissue, but the immediate subepidermal layer is comparatively free from them. The subcutaneous tissue shows some cellular infiltration of the areolar tissue between the fat cells, but is otherwise normal. Some striped muscular fibres seen were normal. The M. Arrectores pili, where seen, were normal in appearance. Nerve endings were not seen. Section of cutaneous nerves shows cellular infiltration between the fibres, but the fibres themselves were normal. Sweat glands normal. Blood-vessels present a variety of appearances, some normal, some with thickening of the external coat, some partly or completely occluded. Numerous thin-walled vessels are present. Bacilli are present in enormous numbers, as will be seen from the accompanying photomicrographs. They are situated in all parts of the corium and in the subcutaneous tissue, but in the subepidermal layer they are less numerous than in other parts of the corium. They were not found in the epidermis sebaceous glands, sweat glands, nor in the blood-vessels, but were present in several of the hair follicles and in the nerves. Both these appearances are shown in the accompanying photographs. The bacilli occur singly and in groups. The groups consist sometimes of a few bacilli, and sometimes of very large numbers forming masses from four to five times the size of a leucocyte. The bacilli are loosely or densely aggregated, and lie occasionally parallel but usually across one another at all angles. Many of the smaller groups are seen to be within mononuclear cells, which are often enlarged and have their nuclei situated eccentrically. In other cases the groups are isolated and have no apparent relation to the cells, though they commonly have a rounded cell-like form. These are best seen in the comparatively cell free subepidermal layer and in the subcutaneous tissue. In yet other places the bacilli occur in large masses in rounded or oval spaces, which they do not always fill up. The appearances suggest that these are transverse and oblique sections of lymphatics completely or partially filled with bacilli. Sometimes there is an apparently endothelial lining to these spaces (*vide fig.*), but this appearance may be due to condensed fibrous tissue round the group. Such spaces are extremely numerous, and although most conspicuous in sections treated by Unna's method, are readily seen on those which have been passed through alcohol and xylol, or bergamot oil, in the ordinary way.

Besides those already mentioned there are groups having an elongated or irregular outline.

In the looser groups the bacilli are embedded in a hyaline or faintly granular matrix. Between the groups there are innumerable bacilli, either single or in twos and threes, lying side by side or end to end, and in the latter case usually forming an angle. No definite chains were observed. The bacilli in the hair follicles occur singly and in small groups, and lie between the epithelial cells. In the nerves they also occur in small groups and singly between the fibres. Individual bacilli are from  $2.5 \mu$  to  $4 \mu$  long, and about  $0.3 \mu$  broad. The majority are straight, some slightly curved or twisted; outline often irregular; ends tapering or rounded; sometimes swollen, rarely pointed; moniliform staining, the ends often staining more deeply than the rest of the bacillus. Club-shaped and irregular forms are not common. In the groups there are many short rods, rounded and granular forms.

*Ulnar Nerve.*—Section measures 6 mm. in diameter. Under the microscope the sections show hyperplasia of the interstitial tissue and sheath, with numerous round, oval, and irregular cells in groups

and strings between the fibres. Many nerve fibres are normal, but the majority are degenerated, consisting only of primitive sheath and myelin droplets. Bacilli are very numerous. They occur in and outside of the cells; in the latter case either free or in matrix substance. They present similar appearances to those already described.

*Popliteal Nerve*—Section oval, measures 7 mm. by 5 mm. Microscopic sections show hyperplasia of the sheath and perineurium, and in less degree of the endoneurium (V. photo). The increased tissue contains round, oval, and irregular cells, for the most part mononucleated, but in one or two places large cells containing many nuclei (eight to twelve) were seen (V photo.) Normal nerve fibres are scanty; the majority were degenerated, presenting similar appearances to those already described. Blood-vessels either normal in appearance or have thickened adventitia, and are frequently surrounded by leucocytes. Bacilli are very numerous. They occur mostly in groups in and outside of cells in the perineurium and endoneurium. They present no unusual characters.

*Spleen*—Tissue very soft. Under the microscope sections show capsule normal, trabeculae less obvious than in a normal spleen, but where seen thickened any containing many spindle any round nuclei. The Malpighian corpuscles are normal in appearance, but the arteries have thickened walls. The cells of the pulp are of normal appearance. The sinuses are very full of blood, and there are numerous small circumscribed and diffuse hæmorrhages. Between the cells there is a large amount of granular material; no multinucleated are observed. The blood-vessels in the trabeculae are dilated, and have thickened external coats. Bacilli are very numerous (V. photo). They occur singly and in groups within and outside of cells. The groups are sometimes dense; sometimes loose. In the latter case there is a faintly granular matrix. Individual bacilli measure 2.5 p. to 4 p. long, and about 3 p. broad. They are usually straight, have rounded or tapering ends, sometimes swollen, or rarely pointed. Moniliform staining. Irregular forms are common in the groups. In the smear preparations from the spleen the bacilli were found sometimes in cells, sometimes free, in groups and singly. The larger groups were round or irregular in outline, and when loosely formed there was a faintly granular matrix. They contained many short, oval, rounded, and granular forms.

*Testis* (V photo.)—Tunica albuginea thickened and densely fibrous, trabeculae thickened by fibrous tissues containing round, oval, and irregular cells, each with a single nucleus; no multinucleated cells were seen. Tubules involved in the fibrosis often distorted. Many contained the remains of epithelium, and in some lining, spermatogenic cells, and spermatoblasts can be made out, and no definite spermatozoa were detected. The epididymis was not examined. Bacilli were very numerous. They occur chiefly in the intertubular tissue, the tunica being free, but they are present within the lumina of the seminiferous tubules. They occur singly and in groups. The groups are, as a rule, small. Sometimes, however, they are three or four times as large as a leucocyte, and are composed of loosely or densely aggregated bacilli arranged irregularly. They occur in the cells, and in a granular matrix, and in the latter case are rounded or irregular in outline. Innumerable bacilli lie between the groups, in cells and free, singly or in twos and threes, parallel or at an angle. Individual bacilli measure 2 p. to 4 p. in length, and about 3 p. broad. The majority are straight, but slightly curved and twisted forms are not uncommon. Ends rounded or tapering; often swollen, seldom pointed. Outline generally slightly irregular. Moniliform staining, the ends being commonly more deeply stained than in the rest of the bacillus. Short, oval, and granular forms common in the groups. Many granular masses, retaining a faint pink colour, but showing no bacterial contents, are also present.

#### *Summary and Remarks.*

The microscopical appearances are those of generalised tuberculous leprosy.

The skin presented the typical appearance of tuberculous leprosy, characterised by cellular invasion of the cutis, and the presence of innumerable bacilli.

The demonstration of bacilli in the hair follicles confirms the observations of Babes and others.

The nerves showed progressing fibrosis, with the destruction of nerve fibre consequent on leprosy invasion.

The spleen showed congestion, softening, and destruction of tissue, and was invaded by leprosy bacilli.

The testis showed progressing interstitial sclerosis, with destruction of proper tissue, consequent on leprosy invasion.

It will be observed that leprosy bacilli were found in every tissue examined. Since these comprised skin, nerves, spleen, and testis, it is safe to assume that they were distributed throughout the whole body, and that incalculable numbers were present. The extensive fibrous changes observed in the nerves, and especially in the testis, show that the disease had existed for a considerable time.

The enormous number of bacilli, their wide distribution, and the extensive pathological changes produced by them, warrant the conclusion that this patient was fairly riddled with leprosy.

#### *Notes explanatory of Photomicrographs.*

1. Lepromatous skin, from eyebrow, showing cellular invasion of cutis. x35. The cutis will be seen to be thickened by granulomatous tissue.
2. Lepromatous skin, from eyebrow, showing leprosy bacilli. x1,000. The photograph shows the enormous number of bacilli, and their situation in relation to cells.
3. Lepromatous skin, from eyebrow; leprosy bacilli in cutaneous nerve. x750. The photograph shows the cellular and bacillary invasion.
4. Lepromatous skin, from eyebrow; leprosy bacilli in hair follicle. x750. The photograph shows the groups of leprosy bacilli between the epithelial cells of the follicle.
5. Popliteal nerve, transverse section showing marked fibrosis. x35. The increase of the perineurium, and, to a less extent, the endoneurium, is well seen in the photograph.
6. Spleen, showing leprosy bacilli. x1,000. The photograph shows the groups of bacilli in the splenic pulp.
7. Testis, showing leprosy bacilli. x1,000. The photograph shows the fibrosed stroma, and the enormous number of bacilli present in it.

## No. 21.

The Medical Superintendent, Coast Hospital, to The President, Board of Health.

Sir,

Coast Hospital, Little Bay, 8 May, 1896.

I have the honor to state that the publicity given to my name in the *Daily Telegraph* and evening papers makes it necessary for me, as a public servant, to forward you my view of the subject therein referred to. Every attention is given to the unfortunate men and women in the Lazarette, and all that care and sympathy can do for them by myself and attendants has been done. The patients themselves constitute the best evidence upon this matter, and to them I respectfully refer you.

I notice in the *Daily Telegraph* of this day that a reporter who asked for information at the Board of Health was informed, "The medical officers by whose advice the Board of Health act in these matters, however, take a different view from that taken by Dr. Taylor, they certifying that both of the men whose leprosy the Superintendent questioned were suffering from the disease in a contagious form." It is evident to me that this statement (if correctly reported) is unsatisfactory. The only medical expert from whom the Board of Health appear to ask advice in cases of doubt about leprosy is Dr. Ashburton Thompson, the certifying of cases being done by that gentleman and Dr. Goode. Dr. Thompson's published statement in regard to the contagiousness of leprosy reads as follows:—

"*British Medical Journal*, 14th December, 1894, page 1514—'Is leprosy a Telluric disease?'

"A renaissance in the nineteenth century of the product of mediæval ignorance into mediæval egoism. 'The extremely severe laws against the liberty of lepers in force in five colonies amount to the hardship of adding imprisonment for life to the infliction of incurable disease.'"

I cannot think that Dr. Goode certified the patient Thompson as suffering from leprosy in a contagious form. How, in the case of Thompson, even admitting him to be a nerve leper (and I submit that the evidence of that disease to be discovered about the man is not sufficient to warrant his being detained in the Lazarette) he can be pronounced a danger to the public health if at large, I fail to understand. The most distinguished experts in leprosy, such as Hansen and Looft, recording as their experience that the bacillus is never found in the discharges from a nerve leper. If this be admitted as correct, how a man in robust health, who from the date of his admission into the Lazarette (10th October, 1894) has never had a day of sickness or the least evidence of advancing disease, whose ulnar nerve, which constituted the chief evidence of leprosy (*vide* my paper in the *Australasian Medical Gazette* of January last) is distinctly diminishing in size, and who, although he has been continually knocking about on the rocks, fishing, &c., has never suffered from ulceration of the affected hand or foot, so easily induced in a nerve leper. How this man can be pronounced to have the disease in a contagious form requires, in my opinion, a definite answer.

In the case of Timothy O'Rourke I was censured by you, and also by the Minister, to whom I appealed. I must therefore infer that many of the cases examined by me, in whom, as I have already stated in the *Australasian Medical Gazette*, I discovered certain symptoms suspicious of leprosy, but whom I could not certify as suffering from that disease, would, had the Board of Health known I failed to report upon them, have been included in the censure. The man Buckman reported by me was certified by Dr. Thompson and discharged. This case has already been referred to in my former letters, and it is therefore unnecessary that I comment upon it.

About the middle of last year two women were examined by Dr. Thompson, and certified by that gentleman as suffering from nerve leprosy. Dr. Goode refused to certify them. Dr. Scot-Skirving was then requested to examine the cases, that gentleman also refusing to certify. I respectfully ask the President of the Board of Health to hand the papers connected with the examination of these women, the papers connected with the examination and certification of Hung Yung, reported by me as suffering from tubercular leprosy and beri beri upon 22nd January last, and the papers connected with the examination and certification of the men Thompson, Buckman, and Ah You to any gentleman having a large clinical experience in disease, and whose judgment may be relied upon by professional men, and ask him to give an opinion as to the consistency of action with regard to these cases, and whether or not, from the opinions and statements in these papers, I was justified in stating that I exercised extreme caution in reporting suspicious cases of nerve leprosy. I have now been two years and two months in medical charge of the Lazarette. The misery in that most miserable place appeals to me, perhaps, more strongly than it does to those who only occasionally visit there. I therefore trust that my earnestness and desire to do what I consider to be right may not be misconstrued by the Board.

I have, &c.,

G. H. TAYLOR,

Medical Superintendent.

## No. 22.

*The Australasian Medical Gazette.*

LEPROSY INQUIRY.—GEORGE HENRY TAYLOR, MEDICAL SUPERINTENDENT, COAST HOSPITAL.

20 January, 1896.

I HAVE been nearly two years in medical charge of the Coast Hospital and Leper Lazarette, and as a considerable part of my time has been spent in investigating leprosy, and particularly nerve leprosy, I am now able to bring some of the results of my work under your notice. The details may appear to be trifling, but they represent a large amount of tedious work, and, I think, have not been noticed by any other observer.

Nerve leprosy in its early stages is an exceedingly obscure disease, and not unfrequently baffles the most careful and experienced examiners when the question of a definite diagnosis is necessary, the more so as the diagnosis involves the question of committing the patient to the Lazarette.

It occurred to me at an early date of my stay here that it was necessary in order to make my opinion a valuable one that I should examine the patients in the general hospital as I would do in the case of a suspected leper, and compare carefully the various departures from what I deemed to be a normal standard. After examining several hundreds of patients in this manner, I know that it is not uncommon to find thickening and tenderness of one or more of the nerves, particularly the ulnar and peroneal, with sensation referred downwards when the nerve is pressed upon, and that after very careful tests a slight amount of anæsthesia and analgesia can frequently be detected in the skin supplied by the affected

affected nerves, with occasional slight terminal anæsthesia. (I cannot have examined less than thirty patients who had these symptoms, and all of them were quite unaware of their condition.) In three cases I noticed eruptions of bullæ upon the hands and feet.

In all these cases of nerve disease, debility, and pains, described as rheumatic, and confined to the limbs, were present.

In my opinion this condition can only be accounted for in two ways—(1) That the majority of them were cases of nerve leprosy in a very early stage. (2) That it was from a cause not yet recognised. In favour of the first it may be argued that leprosy is endemic in New South Wales. That all the cases were anæmic, debilitated, and suffered from pains in the limbs. That all other known nerve diseases could be excluded.

From amongst all these cases I have excluded all those in which there was a history of possible injury to the nerve. It also occurred to me, and unfortunately only very lately, that unless there was some indication for so doing a medical man would not think of examining after death for the bacillus of leprosy, and I therefore determined after every *post-mortem* to remove a portion of the spleen and carefully examine it for the bacillus of leprosy. In three of these (all of them from patients who died after long and exhausting illness) I was able to find, out of a great number of preparations examined, a sufficient number of bacilli to enable me to definitely recognise them as the bacilli of leprosy. In two other cases I found bacilli, but so few in number that I was unable to determine between leprosy and tubercle, although no evidence of tubercular disease was present in either of the cases.

In none of these cases was there the least evidence of leprosy during life, and it remains to be proved whether the bacillus of leprosy is not frequently to be found in the spleen of persons who during life had no symptoms of that disease.

In my next paper I will go into detail in describing some of these cases, and also some of the conclusions I have formed respecting nerve leprosy.

I appeal to the profession to assist me in the matter, particularly in pathological research. The most fertile ground for this would be the various Government Asylums. It would be interesting to prove how many lepers at present are living in them. My experience here leads me to suspect that there are many.

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#### No. 23.

#### The Acting Secretary to The Medical Superintendent, Coast Hospital.

Sir, Board of Health Offices, 127, Macquarie-street, Sydney, 23 January, 1896.

In reference to the statement made by you in a paper entitled "Leprosy Inquiry," published in the *Australasian Medical Gazette* of 20th January, 1896, respecting persons who have died in the Coast Hospital, and who had not in life been suspected of leprosy, that in three cases you were able to find a sufficient number of bacilli to definitely recognise them as the bacilli of leprosy, and that in two other cases you found bacilli, but so few in number as to be unable to determine between leprosy and tubercle, the Board of Health directed that you should be asked to submit to it the preparations on which you based such statement, and I am instructed by the Medical Adviser to ask that you will have the goodness to give effect to the Board's direction as soon as possible.

I have, &c.,

C. A. SIMMS,  
Acting Secretary.

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#### No. 24.

#### The Medical Superintendent, Coast Hospital, Little Bay, to The President, Board of Health.

Sir, Coast Hospital, Little Bay, 27 January, 1896.

In reply to your letter dated 23rd January, conveying a request from the Board of Health that I should submit to it the preparation on which "I based such statement," I have the honor to inform you that I never preserve a slide after having carefully examined it. In the examinations of the spleen I referred to in my paper at least 100 slides were used, and these were cleaned without loss of time, so that I might be able to use them again. I consider that my statement can easily be proved by further investigation. The class of case I consider as suitable for such examination are persons who are either natives or have lived in Australia for many years, and who for years prior to death have suffered from debility. If the Board of Health determine to make an inspection of the inmates of the various asylums perhaps the officer who conducts the inspection can be authorised to perform a *post-mortem* examination upon patients who die during the period of inspection.

I have, &c.,

G. H. TAYLOR,  
Medical Superintendent.

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Read; Meeting of the Board of Health held this day, 4th February, 1896.

Directed, that a letter should be sent to Mr. Taylor expressing the Board's regret that he had not preserved the slides, which would have constituted so important a record, and requesting that if in future he should discover any similar phenomena he should preserve the slide and also send some of the material to the Board for the purpose of independent observation.—C.A.S. Done.—6/2/96.

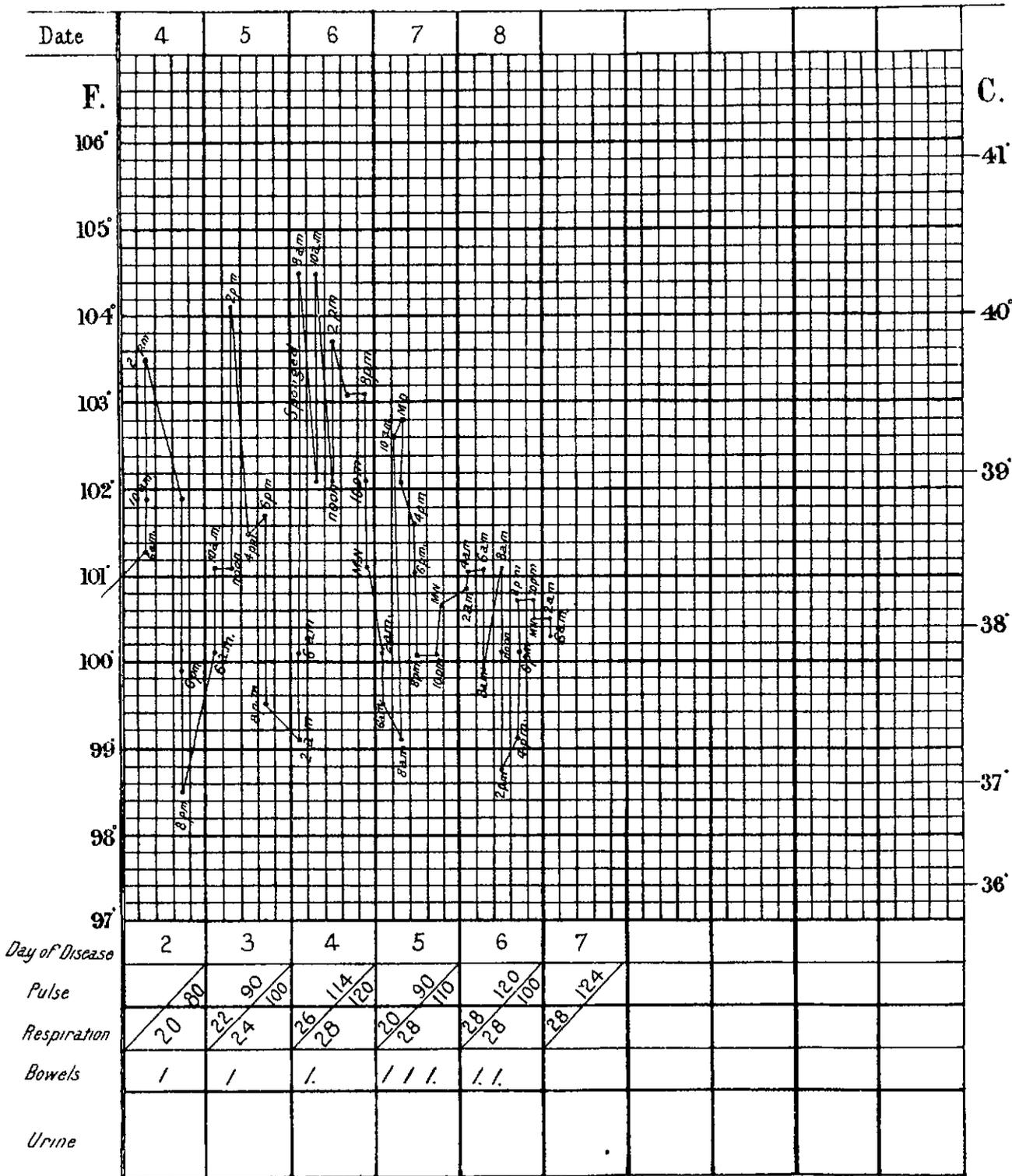
[One Plan.]

# Coast Hospital

Name *Timothy O'Rourke.*

Age *71*

Occupation *Laborer*



(Sig 275-)

1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

VACCINATION.  
(REPORT FOR 1896.)

Printed under No. 20 Report from Printing Committee, 1 October, 1896.

The Chief Medical Officer to The Principal Under Secretary.

Sir,

Sydney, 18 September, 1896.

I have the honor to forward, for the information of the Chief Secretary, the Annual Returns of Vaccinations performed during the year 1895 by the Government Vaccinators of New South Wales.

The returns for 1895 show that 2,467 vaccinations were performed during the year, of which 2,437 were successful. Of the total number, 21 were performed in Sydney and its suburbs, and 2,365 in country districts. It will be seen that vaccination was performed in only 20 country districts. In 90 districts in which there are Government Vaccinators no vaccinations have been reported, and it is presumed that none have been performed.

Of the successful cases, the patients in 105 were under 1 year; in 529 between 1 and 5 years; in 1,008 between 5 and 10 years; and in 786 upwards of 10 years of age. The unsuccessful cases were 30, or 2·5 per cent. of the whole number.

The number of births registered in the Colony during 1895 was 38,715, and the vaccinations give a percentage of 6·29 on this number. In addition to vaccinations performed by Government Vaccinators, a number are performed by private practitioners; but of these no returns are made. There is reason to believe, however, that these cases would not add very materially to the percentage above given.

The department continues to supply pure calf-lymph to legally qualified practitioners of medicine on application at the office; and while this entails a considerable expenditure of public money, yet the money is considered to be well spent, and, after careful consideration, it is not proposed to curtail the supply.

Calf-lymph is procured fortnightly from an establishment in New Zealand. It is of satisfactory quality. No lymph is cultivated in New South Wales.

Whenever large supplies of lymph have been hurriedly wanted this Colony has had to rely on foreign sources. These have often proved insufficient, and always the supplies have been received only after a delay, which, in case of a threatening epidemic, would have gone far to render futile attempted prevention of smallpox.

A real danger is thus indicated, and long experience obliges me to point out that it can be avoided only by establishment of a station at which calf-lymph might be cultivated within and for the use of New South Wales. This I accordingly recommend.

I have, &c.,

J. ASHBURTON THOMPSON,  
Chief Medical Officer.

RETURN (No. 1) showing the number of Births during the past thirty-five years, and the number of Vaccinations performed by Government Vaccinators during the same period.

Year.	Births.	Vaccinations.	Proportion of Vaccinations to every 100 Births registered.	Year.	Births.	Vaccinations.	Proportion of Vaccinations to every 100 Births registered.
1861	14,681	2,349	16·00	1880	28,162	5,029	17·85
1862	15,434	3,155	20·44	1881	28,993	61,239	211·21
1863	15,679	12,970	82·72	1882	29,702	2,188	7·36
1864	16,891	10,696	63·36	1883	31,281	882	2·81
1865	17,233	8,367	48·41	1884	33,946	7,055	20·78
1866	16,950	7,606	44·87	1885	35,043	2,230	6·36
1867	18,317	6,931	37·83	1886	36,284	1,763	4·85
1868	18,485	11,237	60·79	1887	37,236	3,230	8·67
1869	19,243	21,507	111·76	1888	38,525	2,186	5·67
1870	19,648	7,084	36·54	1889	37,295	2,404	6·45
1871	20,143	6,432	32·16	1890	38,960	2,197	5·64
1872	20,250	17,565	86·74	1891	39,453	1,567	3·97
1873	21,444	3,152	14·69	1892	40,041	4,014	10·02
1874	22,178	4,832	21·78	1893	40,342	2,547	6·31
1875	22,528	3,111	13·80	1894	38,952	1,957	5·02
1876	23,298	4,361	18·71	1895	38,715	2,437	6·29
1877	23,851	16,881	70·77				
1878	25,323	3,512	13·86	Total .....	951,439	257,876	27·10
1879	26,933	5,569	20·67				

RETURN (No. 2) showing the number of Persons Vaccinated by the Government Vaccinators in the Colony of New South Wales during the year 1895.

Districts.	Under 1 year of age.				From 1 to 5 years.				From 5 to 10 years.				From 10 years upwards.				Total.			
	Males.	Females.	Total.	Successful.	Males.	Females.	Total.	Successful.	Males.	Females.	Total.	Successful.	Males.	Females.	Total.	Successful.	Males.	Females.	Total.	Successful.
Sydney and Suburbs :-																				
Sydney .....	1	2	3	3	3	3	11	11	4	3	7	7	..	..	..	..	8	13	21	21
Randwick .....	..	..	..	..	3	5	8	8	11	10	21	21	1	10	11	11	12	20	32	32
Waverley .....	2	..	2	2	..	..	..	..	2	7	8	8	..	..	..	..	8	11	19	19
	3	2	5	5	6	13	19	19	17	19	36	36	2	10	12	12	28	44	72	72
Country Districts :-																				
Albury .....	5	4	9	9	7	8	15	15	3	..	3	3	..	1	1	1	15	13	28	28
Bega .....	24	20	44	41	80	87	176	176	119	108	227	226	82	84	166	163	314	269	613	609
Brisbane Water .....	..	..	..	..	1	2	3	3	8	3	11	11	6	10	16	16	15	15	30	30
Camden .....	..	..	..	..	1	1	1	1	..	1	1	1	..	..	..	..	2	2	4	4
Candelo .....	1	3	4	4	14	24	38	38	30	37	67	67	42	53	95	95	87	117	204	204
Captain's Flat .....	8	..	8	8	14	7	21	21	2	2	5	5	..	..	..	..	24	10	34	34
Coota .....	..	..	..	..	1	..	1	1	3	3	7	4	..	..	..	..	4	5	9	9
Cowra .....	1	4	5	4	21	20	41	39	82	110	204	194	61	72	133	127	165	215	380	364
Dubbo .....	..	..	..	..	1	..	1	1	1	1	1	1	..	..	..	..	1	..	1	1
Glen Innes .....	3	..	3	3	14	12	26	26	26	17	43	43	21	20	41	41	64	40	113	113
Gunnedah .....	..	..	..	..	2	3	5	5	4	2	6	6	1	2	3	3	7	7	14	14
Goulburn .....	3	2	5	5	32	36	68	68	00	70	169	167	54	88	142	142	179	205	384	382
Kempsey, West .....	1	..	1	1	8	3	11	11	64	50	114	114	22	22	44	44	95	75	170	170
Molong .....	..	..	..	..	3	3	6	6	3	3	6	6	..	..	..	..	3	6	9	9
Murrumburrah .....	2	2	4	4	2	..	2	2	12	6	18	18	11	8	19	19	27	16	43	43
Narramine .....	..	..	..	..	1	1	2	2	5	11	16	16	11	13	24	24	17	25	42	42
Newcastle .....	1	1	2	2	7	10	17	17	8	6	14	14	4	4	8	8	20	21	41	41
Orange .....	1	..	1	1	10	7	17	16	37	31	68	62	45	40	85	82	64	78	171	161
Taree .....	11	7	18	18	28	34	60	60	..	1	1	1	..	..	..	..	37	42	79	79
Warialda .....	..	..	..	..	4	8	12	9	4	7	11	9	..	5	5	5	8	20	28	28
	61	43	104	100	258	263	516	510	501	488	989	967	360	426	786	774	1,175	1,220	2,395	2,386
Summary :-																				
Sydney and Suburbs .....	3	2	5	5	6	13	19	19	17	19	36	36	2	10	12	12	23	44	72	72
Country Districts .....	61	43	104	100	253	263	516	510	501	488	989	967	360	426	786	774	1,175	1,220	2,395	2,386
	64	45	109	105	259	276	535	529	518	507	1,025	1,003	362	436	793	786	1,203	1,264	2,467	2,457

RETURN (No. 3) showing the number of Persons Vaccinated by the Government Vaccinators in the Colony of New South Wales during the year 1894, which was received too late to be included in the Return for that year.

District.	Under 1 year of age.				From 1 to 5 years.				From 5 to 10 years.				From 10 years upwards.				Total.			
	Males.	Females.	Total.	Successful.	Males.	Females.	Total.	Successful.	Males.	Females.	Total.	Successful.	Males.	Females.	Total.	Successful.	Males.	Females.	Total.	Successful.
Newcastle .....	..	..	..	..	2	2	4	4	1	..	1	1	..	..	..	..	3	2	5	5

1896.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

## INSANITARY STATE OF TOWN OF PARKES.

(RETURN RESPECTING.)

*Printed under No. 5 Report from Printing Committee, 18 June, 1896.*

RETURN to an *Order* made by the Honorable the Legislative Assembly of New South Wales, dated 28th May, 1896, That there be laid upon the Table of this House,—

“A copy of the report of the Medical Officer who was lately sent to Parkes to inquire into the prevalence of typhoid fever and the insanitary state of that township.”

*(Mr. Perry, for Dr. Ross.)*

Sanitary inspection of the town of Parkes, with special reference to the recent outbreak of typhoid fever.

Sir,

Board of Health, 12 May, 1896.

In accordance with your instructions I visited Parkes and inspected the town on April 27th, 28th, 29th, and 30th, 1896. I received information and assistance from the following gentlemen:—The Mayor (Mr. John Medlyn) and members of the Municipal Council, the Council Clerk (Mr. Pulver), the District Registrar (Mr. Miller), the Postmaster (Mr. Lorking), Police-Sergeant Ranford, the Government Medical Officer (Dr. H. Oswin Johnson), Dr. Devlin, the Inspector of Nuisances (Mr. Garland), and others. I have the honor to submit the following report:—

*Area, Population, &c.*

The area of the Municipality of Parkes is 15½ square miles, the number of houses 750, population estimated at about 3,500, at 1891 census 2,950. The great majority of the inhabitants live in or near the town. The figures given indicate a ratio of four persons per house. In the course of my inspection I met with two families, numbering eleven and thirteen respectively, occupying small wooden four-roomed cottages. I am informed that such overcrowded conditions are not uncommon, and that occasionally children were found occupying the same bed as typhoid patients.

*Site and Drainage.*

The houses comprising the older part of the town are situated in a hollow, but a large number of newer houses occupy the slope of a range of low hills to the east and north. The soil is a loose gravel or drift on the east and north, becoming clayey on the west. The surface, and probably also the underground, drainage is from the east and north to three large dams at the south of the town, the overflow from which ultimately reaches Billabong Creek, further south. The dams referred to are used mainly for mining purposes. The consequence of these natural features is that the drainage of the higher-lying eastern and northern parts passes through or under the greater part of the town on its way to the southern dams. The porous stratum does not appear to be deep, nor the flow through it rapid. When rainfall is at all great in amount the lower part of the town becomes swampy. I am informed that water wells up in certain streets for weeks after rain, and that cellars contain water for some time in amounts that require pumping out. In Bogan-street, which coincides approximately with the junction

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of

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of drift and clay, a large cobblestone drain has been made, which is continued into the southern dams by a natural channel. This drain represents a storm-water sewer, having been constructed to carry off surface-water after heavy rain. At the time of my visit it was obstructed at intervals and grass-grown, and what water reached it became stagnant. This is the main drain of the town, and might be satisfactory if sufficient water reached it to maintain a current. Although gutter-spaces were made when the town was laid out they are now mostly filled up with soil and overgrown with grass. In one or two places impervious guttering has been laid down for short distances, but here such efforts are rendered abortive owing to want of continuity. The drainage into them, on reaching the gutter-spaces, which have not been impervious, becomes stagnant, and remains until it evaporates or percolates into the soil. In some places, especially in lanes, this stagnating drainage was extremely foul. Since house-drains, carrying slops, are allowed to discharge into the streets, it is of the greatest importance that more attention should be paid to gutters. This is not only desirable on the score of cleanliness, but necessary in order to lessen the pollution of the soil resulting from the neglect of such measures. If the means are lacking to provide impervious gutters, something might still be done with the spade and broom towards securing a better state of things.

#### *Houses and Premises.*

The private houses comprised the usual varieties found in country districts. Small wooden structures, weatherboard cottages, small and large brick cottages, and a few two-storey brick buildings. Inferior kinds of wooden buildings are numerous. Many of the older ones are dilapidated and unfit for habitation. In many cases where a brick house has been built the original wooden one remains attached and forms part of the dwelling. The roofing is almost universally galvanised iron. With regard to other points of construction I would at present only call attention to one important defect. In a few houses there is no flooring. In others, although there are floors in the front rooms, the back rooms and outhouses (kitchen, &c.) had no floors. In other houses, again, the flooring was deficient owing to large fissures between the boards. In very few instances was there an air-space between the floor and the earth, and it is needless to remark that no air-proof basements were observed. I have pointed out these defects for the purpose of showing that the occupants of the majority of the houses were not at all protected against ground-air and ground-water, with their contained impurities. I may here mention that I found that sometimes, but not always, the rooms were disinfected after typhoid patients had recovered or died. The disinfection, where practised, was carried out by the occupants. Recent investigations on other micro-organisms suggest the possibility of the typhoid bacillus remaining alive for a considerable time in household dust. Rooms in which the patients have been should be thoroughly disinfected and cleaned (painted or papered).

Municipal by-laws issued in 1894 (copy attached) direct that all yards, &c., shall be kept in a cleanly condition, all dust, mud, refuse matter, &c., to be collected into one place and removed when a certain amount has accumulated (By-laws 61 and 62). Refuse from stables, &c., to be similarly collected and removed (By-law 65). The collection of substances for manurial purposes is excepted under certain restrictions, with this exception, the garbage must be removed; burning it off is prohibited (By-laws 89 and 90). The Council has the right of entry on complaint of nuisance, and if this be not abated after notice there is a penalty (By-law 67).

Although these by-laws are satisfactory, they do not seem to have been enforced. Inspection showed that back yards were often ill-defined and not properly fenced off from one another. Sometimes there was no enclosure round the house. Many of the premises were badly kept and uncleanly. House-refuse, food-scraps, stable-litter, and other rubbish were usually found scattered about the yard, and there were no signs of any particular spot being used as a rubbish-heap, as directed in the by-law. These conditions, together with the absence of indications of much dumping of garbage at the depôt, showed that this matter was in general neglected. The absence of a drainage system perhaps necessitated the throwing of slops on the hard surfaces, but such a procedure is none the less dangerous. While certain kinds of slops are innocuous, others, such as those produced by the washing up of plates and dishes, contain such putrescible organic matter and possess potentialities for evil not far removed from those of sewage. In a few instances the slops were carried off the premises by open brick drains, but this only amounted to transferring the mischief to another spot a few yards away, since the slop-water ceased to flow on reaching the gutterless streets, and formed stagnant and often stinking pools. The site of the closets was usually at a sufficient distance from the houses. They were provided with either cess-pits or pails. Previously to 1890 cess-pits were almost universal. At that time a by-law (copy attached) was issued to the effect that a dry-earth system should be adopted within certain named boundaries. This by-law was complied with only by some, many cesspits being retained. The validity of the by-law was disputed, and it was not enforced by the local authorities. The 1894 by-laws apparently permit the retention of cesspits, provided they be so constructed so as not to be a nuisance, &c., and have watertight walls so that there shall be no overflow, leakage, nor soakage from them (By-law 60). They are to be emptied after the addition of a suitable amount of deodorizer, when their contents have accumulated to within a distance of one foot from the top of the cesspit (By-law 63). The Inspector of Nuisances informed me that he had visited 150 cesspits, and believed there were more which he had not yet seen. In addition to those in actual use there was reason to believe that many former ones on being replaced by pails were merely filled in without previous emptying. Such places were pointed out to me in back yards of several houses in the town. The cesspits are distributed irregularly throughout the town, and are numerous in the north-eastern part, that is on the higher ground, the drainage from which passes through the greater part of the town. I have mentioned that the soakage from this area wells up on the surface of the streets below, and I am informed that this soakage has been noticed to have faecal odour. In this and other parts of the town heavy rains sometimes cause the cesspits to overflow. I visited many cesspits in and about the town. They presented all the usual foulness of such contrivances, were not water-tight, and sometimes quite full. The odour emitted from some of them was nauseating, and a near approach was not necessary to its perception.

Although the by-laws mentioned above (1890) refer to the adoption of a dry-earth system no such system prevails. The 1894 by-laws in this regard require that when pails or pans are used supplies of earth, ashes, charcoal, lime, or other substance shall be kept and thrown on the excreta in sufficient quantity to cover and deodorize them (By-law 64).

The by-laws already quoted respecting cleanliness, leakage, &c., apply to pails as well as to cesspits. Inspection showed that these by-laws were neglected. It was exceptional to find any supply of earth, ashes, or other dry substance in the closets. The pails when they did not leak contained much liquid. Often, however, they leaked, and some had large holes in them. No regulations exist relative to the size and kind of pail to be used, this being left to the fancy or convenience of the owner of the closet. The pails were of a satisfactory nature occasionally. Generally, when of sufficient capacity they were too low, several inches of space intervening between the closet-seat and the top of the pail. The consequence was that the woodwork and ground beneath the closet (invariably porous) were nearly always foul with urine. The significance of this will be realised in view of recent investigations having proved that large numbers of typhoid bacilli are excreted with the urine. Not uncommonly the pails were improperly placed, and only partly caught the excreta. The outside of the pail and the ground beneath were then soiled by the bowel-discharges. Frequently the pails were much too small to serve the required purpose, and the openings in the walls of the closets by which the pails are introduced were often too small to admit a sufficiently large pail. I did not meet with a really good kind of pail. The best I saw were of galvanised iron, and were to be obtained from a maker in the town. It generally happened, however, that, either from lack of means or negligence, no proper pail was provided. Any piece of worn-out or disused hardware seemed to be considered by some as sufficiently good for the purpose. Amongst others, oil-kegs, half kerosene-tins, paint-pots, and similar defective utensils were found. In one instance I met with a closet in which there was neither cesspit nor pail, the excreta being simply deposited on the floor of the closet, and even the seat was fouled.

Far from being a dry-earth system, the arrangements were of the most primitive and faulty character—if anything, worse than cesspits. This would scarcely need saying were it not for the fact that I was told elsewhere that the experiences at Parkes showed that the dry-earth system was a failure.

#### *Removal and Disposal of Refuse.*

Garbage removed in accordance with the by-laws may be deposited only upon a certain area set apart for the purpose by the Council (By-law 66). This by-law was also neglected. Frequently the garbage removed was not taken to the depôt at all, but tipped out at the first convenient spot. I have already mentioned that the by-laws provide for the emptying of cesspits, but I could not find any regulation as to the emptying of pails. Apparently this is left to the discretion of the householder, but is supposed to be done once a week, oftener if required. The scavenger, who is only nominally under the control of the Council, is paid by the householders at the rate of 3½ per pail. The removal is done at night, the pails being merely emptied into a cart and replaced. No cleaning or scraping of the pails is indulged in. I made an effort to see the cart but failed, as its whereabouts did not appear to be known to the authorities. I cannot speak, therefore, as to its suitability for removing nightsoil. I am informed that it is never cleaned, and complaints were frequent as to bad smells associated with the nightman's operations.

By-law 66 (1894) directs that nightsoil may only be deposited at the depôt appointed by the Council, exception being made in the case of material from earth-closets to be used as manure. The depôt is situated 2 or 3 miles to the south-west of the town. Here the nightsoil is tipped into pits about 6 feet deep. When filled to within 2 feet of the top the pit is covered in and a new one made. It is said that nightsoil is frequently tipped into disused mining-shafts at places other than that set apart by the Council, but I obtained no evidence of this. The site of the depôt for garbage and nightsoil is unobjectionable as far as Parkes is concerned. Owing to the Condobolin railway line having been made through a portion of the site a new one has been selected a little distance away, but its use for the purpose has not yet received the sanction of the Lands Department. The disposal by burying was as satisfactory as such methods usually are.

It will be observed that the conditions relating to the care of premises and removal and disposal of refuse have not been described in relation to any ideal standard. The municipal by-laws have been taken as a guide to what might reasonably be expected to be done in such matters. It has been found that these by-laws have been neglected all along the line. The result has been wholesale pollution of the soil, from drainage, from slops, from rubbish, from nightsoil.

In answer to inquiries as to the method of dealing with the excreta of typhoid patients, most of those interrogated stated that they had buried them in the back yards or gardens. In a few cases this was done without any attempt to previously disinfect them, but in many cases the stools were covered with lime or ashes. Usually the motions were passed into a bed-pan containing carbolic acid or some other disinfectant and "buried at once." No time being given for the disinfectant to penetrate, the greater part of the stool, probably, remained infective. In one case only did I find that the stools were destroyed by burning. These excreta were not buried deeply—2 or 3 feet at most, sometimes only a few inches. Hence, in addition to the other deplorable sanitary errors, there was pollution of the soil with living and no doubt virulent typhoid germs. It is not known how long typhoid bacilli remain alive in the soil. The many factors influencing its existence would in one case kill the bacilli quickly, and in another prolong their life. The seasonal prevalence and recurrence of typhoid in the same locality year after year indicate that the bacilli are capable of living in the soil at least several months.

The result of soil-pollution would have an influence on the residents in two ways—

- (1) By contaminating the atmosphere.
- (2) By contaminating water.

The contamination of the air is due to the evolution of noxious gases (ptomaines and similar bodies). The inhalation of these gases produced the conditions included under the term mephitic poisoning. If the dose be sufficient the result is fatal. This has sometimes occurred in cleaning out cesspits. Short of this, more or less serious inflammations of the throat and lungs may occur. Even when diluted by diffusion their continued inhalation produces a condition of lowered vitality, scarcely amounting to a definite illness, but nevertheless rendering the individual more than usually susceptible to diseases produced by other causes (*e.g.*, pathogenic micro-organisms, such as the typhoid bacillus). I have called attention to the fact that the houses rarely provided any protection from such gases. No person with a normal sense of smell could fail to detect their presence in the open air, especially in certain lanes. They would therefore exert their influence both in and out of doors. (I am here assuming that foul odour means

means noxious properties. Though this is not scientifically correct, there is no doubt that the one condition is usually associated with the other. For our present purpose no distinction need be drawn between them).

Under the circumstances there can be no doubt that the inhabitants of Parkes have been fully exposed to the risk of depressed vitality produced by the inhalation of mephitic vapours. It only remains to point out that of all the influences which predispose to typhoid this is regarded as most dangerous.

Before discussing the second way in which soil-pollution would react it will be necessary to describe the water supply of Parkes.

Previous to 1893 rain-water was mostly used. In that year a public supply was first brought to the town. The source is underground water, from a drift under Billabong Creek, about 2 miles to the east of the town, and separated from it by the eastern range of hills already mentioned. The actual catchment area does not appear to be known, but it is believed to be several miles further up the creek. It is known that pumping does not effect the wells in the immediate neighbourhood, and that local rains do not augment the supply. In the drift a well has been sunk and pumping-gear erected. By this means water is pumped into a large open brick and cemented surface reservoir, situated on the upper part of the eastern range of hills overlooking the town. From this surface-pipes are distributed to the town.

There are several houses in the near neighbourhood of the pumping-station, but since the catchment area is probably some miles away this does not seem to be of any great importance. Further up the creek, I am informed, the houses are few in number. The service reservoir is unobjectionable as to site and construction.

The service-pipes being laid underground in a polluted soil are naturally in a dangerous position.

The service of water is very defective. It was commenced to part of the town in December, 1893, and completed in July, 1894; maintained constant to March, 1895, and then intermitted (twice weekly) till August, 1895, when it was stopped entirely to permit of repairs to the service reservoir. An intermittent supply was recommenced in November, 1895, the water being turned on about once a week till March, 1896. As the result of rain, a constant supply was maintained till 15th April, 1896, when it was again intermitted, being turned on for one hour twice a week.

During the intermissions water was purchasable at the Council's stand-pipes at the rate of 1s. per 200 gallons.

The public service is consequently a failure, and the year has been characterised as one of great scarcity of water. The other sources available were:—

1. Rain-water caught on the roofs and collected into tanks.
2. Water from wells near Billabong Creek.
3. Water from private wells in the town.

The roof-water was, in the majority of cases, collected into large galvanised-iron tanks. These do not seem to have been cleaned out often. In some instances the water was collected into underground tanks, usually, but not always, cemented. Some of these had a dome-shaped covering of cement, and were satisfactory as far as they went; others were covered merely by boards. These underground tanks were sometimes situated under houses, and many of them were not sufficiently protected against pollution by surface-washings.

The water carted from the wells near Billabong Creek was drift-water. Some of these wells were situated below the point at which the town-drainage entered the creek. The source of the water supplying them, however, is not known, and is not necessarily that of the creek.

Private wells were few in number. Those I saw were not protected from soil-water pollution, and were in dangerous proximity to cesspits. I could not obtain any evidence of the water from these wells being used for drinking purposes except for horses and cattle.

As the result of questions addressed to many of the residents as to the water used for drinking, I found that there was a general tendency to avoid the public supply. The rain-water collected into over-ground and under-ground tanks was mostly used. In a few instances creek-water was used, but only when no other was available.

The preference for tank-water seems to have resulted partly from its being "rain-water" and partly because it was clearer than the service water. Samples of the former were clear and sparkling and free from odour. The service water was slightly turbid, and contained specks and scales of rust, &c.

It scarcely needs saying that these obvious physical characters are no guide whatever to the purity of a water. The roofs from which the water was collected were clean at the time of my visit, but I was informed that previous to heavy rainfall in February last they were covered with dust to such an extent that in some cases the gutters were blocked. During the dry weather dust-storms are not uncommon, and the town is a dusty one. In washing the roofs clean the dust was, of course, carried into the water-tanks. If the polluted nature of the soil be borne in mind, the probabilities suggested that this dust contained not only the many impurities usual in dust, but also pathogenic organisms. Whether or not the bacilli, such as *B. Typhosus*, would remain alive in the dust till carried into the water-tanks depends on the amount of exposure to sunlight, oxygen, &c., they were subjected to. It is at least possible that some of them reached the tanks in a living condition, and in the contained water it would not take a few bacilli long to multiply into many millions.

It may here be remarked that the length of time typhoid bacilli remain alive in unsterilised water, such as that in the tanks, has been made the subject of experiment. They were found to have remained alive in large numbers after 158 days, or nearly six months, and may perhaps continue to live very much longer. They have been found alive in the mud from the bottom of deep lakes (Geneva), and would no doubt live well in the deposit in tanks.

Dissolved impurities derived from the dust must not be lost sight of. They, in themselves, might be such as would exert an injurious influence.

Another element unfavourable to this water is the fact that it had to be stored, often for long periods, and was consequently exposed to contamination in numerous ways. For instance, there was the possibility of pollution by surface-washings in the case of those wells with insufficient coping. The mere situation of underground tanks in a sewage-polluted soil would attach suspicion to the water they contain. Their cemented walls nominally, but by no means necessarily nor actually, protect them from pollution by ground-water. It

It will be obvious, therefore, that this so-called rain-water was not free from doubt as to purity, and was, at least, undesirable as a drinking-water. I would, however, lay stress on the fact that soil-pollution is the primary evil. Were it not for this the roof-water would be satisfactory for drinking purposes.

As to the service water. Underground water from sand, gravel, or drift may be perfectly pure, but on the other hand it may not. It is liable to contain an injurious amount of saline, and, at least, vegetable organic matter. Whether there be original impurity or not, the service-pipes run through sewage-soaked soil, and, moreover, the supply was intermittent and scanty. Insuction of materials from the soil can occur into a full flowing water-pipe, which is rarely air and water tight; but when, after running full, an intermission occurs, insuction of ground-air and ground-water is especially likely to happen. The hydrant-holes in Parkes are fitted with ball-valves, and I observed that at least one of them leaked. Materials so sucked in would be distributed when the water was again turned on. The soil-pollution again is the source of danger. Scarcity of water, both in itself and by involving neglect of cleanliness, produces defective health.

This consideration of the water supply of Parkes is sufficient to show that a very dangerous and undesirable condition of things exists. The water available is not free from suspicion as regards purity, and is not sufficient in amount.

Having considered the advisability of having the water analysed, I came to the conclusion that such a measure would serve no useful purpose, even if did not mislead. The present composition of the water, when the supply is short, would give no clue to its former condition when the supply was abundant. A biological examination, which would be necessary to detect typhoid bacilli, I did not see my way clear to undertake.

The methods of contamination shown to have been possible in Parkes are those known to have been instrumental in disseminating typhoid fever.

I am informed that a scheme is under consideration whereby water from a pure source may be brought to the town by gravitation in sufficient quantities to yield a constant supply. In view of the urgent need of such a supply it is to be hoped that the work will be carried on with all possible expedition.

#### *Dairies.*

The Dairies Supervision Act is in force in the district. The dairies I visited, though not of the best construction, appeared to be conducted in a satisfactory manner. The bail-yards and store-houses were clean, and the cans clean, bright, and free from sour odour. I was informed that the others were equally clean, and always kept so.

#### *Slaughter-houses.*

These are under the supervision of the police. On the report of the sergant that they were clean and well kept, I did not think it necessary to visit them.

#### *Other Sources of Food Supply.*

In the course of my inspection I visited the premises of several bakers, butchers, cordial-makers, &c. Nothing was found meriting special report.

The results of the inspection as regards general sanitary conditions may be briefly summed up as follows. The combined influence of natural conditions and the absence of an efficient drainage system is such as to render Parkes specially liable to diseases fostered by soil-pollution. The neglect of the by-laws provided for the suppression of nuisances has resulted in an excessive pollution of the soil. This pollution of the soil has in turn reacted on the air and the water, the latter, in addition to its possible contamination, being deficient in amount. The three great principles of hygiene have thus been neglected—there has been neither pure air, pure soil, nor pure water.

#### *The Causes of Death.*

The defective conditions above noted have been in existence for several years. If they have been injuriously affecting the health of the community the mortality returns should indicate it by showing high rates for those diseases (filth diseases) invariably associated with sanitary neglect. In the following table the numbers of deaths from such diseases are given for the five years 1891 to 1895, a note as to previous mortality (1883 to 1890) being added in each case. The figures were obtained from the district register. They have reference to the whole municipality, but since the majority of the residents live in or near the town the general conclusions drawn from them may be applied to the town itself.

Table showing numbers of Deaths from certain Diseases.

Deaths from.	1891.	1892.	1893.	1894.	1895.	In previous years.
Lung diseases.....	12	4	8	17	19	
Pneumonia.....	12	4	7	3	5	About 3 per year till 1890, then 11.
Bronchopneum.....				1		Irregular, few deaths.
Bronchitis.....			1	13	14	" "
Intestinal diseases.....	3	4	9	8	7	" "
Inflammation.....	1	1	7	6	2	" "
Dysentery.....			1			Irregular.
Diarrhoea.....	2	3	1	2	5	1 to 4 deaths a year.
Zymotic diseases.....	13	9	15	20	10	
Typhoid.....	1	1	7	2	3	Irregular.
Tuberculosis.....			6	3	3	No information.
Whooping cough.....		2	1			Irregular.
Influenza.....	1				3	" "
Diphtheria.....	7	6		12	1	1 to 3 deaths a year.
Sepsis.....	4		1	3		No information.
Totals—Causes specified.....	28	17	32	45	36	
Other causes—Nervous, circulatory, heat, accident, &c.	53	59	36	44	31	
All causes.....	81	76	68	89	67	

From these figures it would appear that previous to 1890 Parkes was fairly free from serious mortality. It will be remembered that the first efforts in the direction of sanitation were made in 1890. Since then the list of death-producing diseases includes the majority of those fostered by sanitary error. There are twelve in number, viz., Pneumonia, broncho-pneumonia, bronchitis, inflammatory diseases of the intestinal tract, dysentery, diarrhoea, typhoid fever, tuberculosis, whooping cough, influenza, diphtheria, and septic diseases.

During the five years under special consideration these diseases contributed 158 to the total of 381 deaths registered in the Parkes district. They were therefore responsible for nearly half the deaths. To the mortality of the whole Colony these same twelve diseases contribute about one-third of the total number. In 1894, for example, they caused 5,222 of the total 15,170 deaths. It is to be observed, however, that tuberculosis (phthisis) forms a conspicuous feature in the death-roll of the whole Colony, but is very insignificant in that of Parkes. Only twelve deaths from this cause have been registered during the five years. Excluding phthisis, the diseases in question contribute a little more than a quarter of the total number of deaths in the Colony; in 1894 they furnished 4,076 of the total 15,170.

From these comparisons it is clear that the diseases specified contribute an inordinately large number of deaths to the mortality of the Parkes district.

In the following table the death-rates for the last five years are given, expressed as a ratio per 1,000 persons living. The population for each year since the 1891 census has been roughly estimated and given in round numbers. A note as to important local events which may have influenced the mortality is appended to each year:—

TABLE showing Mortality from certain Diseases per 1,000 persons living.

Year.	Population.	Death-rate, all causes.	Pneumonia	Bronchitis	Lung diseases generally.	Inflam. Intest. diseases.	Diarrhoea	Intest. diseases generally.	Typhoid.	Diphtheria.	Zymotic diseases generally.	Other causes.	Important local events.
1891...	2,950	27.4	4.0	...	4.0	0.3	0.6	1.0	0.3	2.3	4.4	17.9	Railway opened.
1892...	3,100	26.4	1.3	...	1.3	0.3	0.9	1.2	0.3	1.9	2.9	19.0	Exodus to Wyalong.
1893...	3,200	26.2	2.1	0.3	2.3	2.1	0.3	2.8	2.1	..	4.6	11.2	Peak Hill rush.
1894...	3,300	23.9	0.9	3.9	5.1	1.8	0.6	2.4	0.6	3.6	6.0	13.3	Water service completed.
1895...	3,400	16.7	1.3	4.1	5.5	0.5	1.4	2.1	0.8	0.2	2.9	9.1	Great heat and insufficient water.

The significance of the figures in this and the preceding table has been broadly interpreted in the following notes:—

*Death-rate from all Causes.*—There has been a satisfactory diminution during the five years, from 27.4 in 1891 to 16.7 in 1895. The rate is still, however, much above that for the whole Colony (14.9), and even more in excess of that for the country districts (excluding Sydney and suburbs), which is 13.0 per mille.

*Pneumonia.*—(Rate for the whole Colony, about .5 per mille.) The mortality from this disease was not serious till 1890, but in that and the succeeding year the rate was excessively high. This may perhaps be accounted for by the temporary influx of persons consequent on the opening of the railway and the development of mining. In 1889 and 1890 the numbers of miners' rights issued were 878 and 882 respectively, the usual yearly number being from 300 to 600. Since 1891 the death-rate has been less, but is still much above the mean, and does not appear to be diminishing.

*Bronchitis.*—(A few deaths registered as bronchitis and asthma are included.) (Rate for the whole Colony, about 6 per mille.) Till 1892 fatal cases were few and irregular. In 1893 there was a small mortality (.3 per mille). The rates show marked and successive increases in 1894 and 1895 (3.9 and 4.1). No special local event has been ascertained which could account for this sudden increase. The death-rate from bronchitis is excessively high, and is increasing.

*Respiratory Diseases generally.*—(Rate for the whole Colony, about 1.7 per mille.) Since 1892, when the rate was below the mean, there has been a continuous and marked increase, and it is at present excessively high (5.5 per mille).

*Inflammatory Diseases of the Intestines.*—(Rate for the whole Colony, about .5 per mille.) Fatal cases were few and irregular till 1893, when the rate jumped from a previous .3 per mille to 2.1 per mille. Since that time it has steadily diminished, and in 1895 was about the same as in the whole Colony.

*Diarrhoea.*—(Rate for the whole Colony, about .6 per mille.) The rate was fairly constant and about that for the whole Colony till 1895, when there was a sudden increase to about twice the mean.

*Diseases of the Digestive System generally.*—(Rate for the whole Colony, about 1.2 per mille.) Till 1892 the rate was about the same as that for the whole Colony. In 1893 a sudden rise occurred to twice that of the Colony. This high rate has been maintained, but has a tendency to diminish. The only ascertained local event which might have produced the increase in 1893 was the introduction of a new drinking-water. The public service was partially introduced in 1893, and completed in 1894. In support of the above surmise there is the fact that the use of water of different composition from that to which a community is accustomed, quite apart from the question of its purity, is known to sometimes produce sickness at first. The change in the case of Parkes was from roof-water to underground (drift) water. The evidence is not conclusive.

*Typhoid Fever.*—(Rate for the whole Colony, about .2 per mille.) This disease contributed irregularly to the death-rate till 1890, and regularly since then. In 1891 and 1892 the rate was already high. In 1893 there was a sudden increase to 2.1 per mille. In 1894 and 1895 the rate fell again, but remains much above the mean, and shows a tendency to rise.

*Diphtheria* (including deaths registered as Croup).—(Rate for the whole Colony, about .3 per mille.) Till 1890 the mortality from this disease was irregular, and not large. In 1891 and 1892 the rates were very high—2.3 and 1.9 respectively. The year 1893 seems to have been skipped. In 1894 the rate was excessive—ten times above the mean. In 1895 there was a fall to .2 per mille—that is, to below the mean. It is interesting to notice in this connection that the curative serum for diphtheria was used in 1895.

Deaths

Deaths from diphtheria constitute the principal sign afforded by the death-rate of the prevalence of sore throats. These predispose to diphtheria, but not being of a fatal nature do not themselves appear in the mortality. Consequently we may assume, and the assumption is supported by clinical evidence, that sore throats were numerous. Sore throats (sometimes called "sewer-air" throats) are commonly associated with sanitary defects.

*Zymotic Diseases generally.*—(Rate for the whole Colony, 2·2 per mile.) The only point to be noted is that the death-rate from Zymotic diseases is above—in some years very much above—the mean rate for the Colony.

*Causes other than those specified.*

The death-rate has a tendency to diminish.

I am conscious that the figures on which the above notes are based lack rigid accuracy. The estimations are only approximate, and the period covered is short. No allowance has been made for age and sex distribution, occupation, conditions of life, &c. Moreover, the population of a mining district is liable to fluctuations which would not be evident in estimations based on the census figure. These factors may, and no doubt did, influence the mortality. Nevertheless, in spite of these shortcomings, the conclusions drawn from the figures may be legitimately regarded as affording fairly reliable, though rough, guides to the condition of affairs. With this limitation in significance borne clearly in mind, the information furnished by the figures may be expressed in the following general terms:—

*Death-rates from—*

All causes	...	...	} Diminishing, but still high.
Unspecified causes	...	...	
Intest. inflam.	...	...	} Diminishing, and about mean.
Pneumonia	...	...	
Zymotic diseases	...	...	} Maintained high.
Bronchitis	...	...	
Pulmonary diseases	...	...	} High, and tend to increase.
Diarrhoea	...	...	
Digestive diseases	...	...	
Typhoid fever	...	...	
Diphtheria	...	...	Apparently checked.

The general result of this statement is to show that whilst there is a diminution in the death-rates from diseases not specially effected by hygienic conditions, the rates from those known to be intimately associated with sanitary defects are either increasing or are much above the mean. The evidence thus furnished confirms the proposition stated above, viz., that the influence of the soil-pollution, &c., would reveal itself in the mortality returns.

The whole chain of evidence is to the effect that at the end of the year 1895 the condition of the town and people of Parkes was such as to render them specially liable to an outbreak of typhoid fever. The experiences of the town during the present year show that such an outbreak has actually occurred. Since the beginning of the year 74 deaths have been registered, a number little short of the annual average for the last five years, viz., 76. A closer inspection of the register showed that the excess of deaths was mainly due to two causes, diarrhoea and typhoid fever. Other diseases contributed about the usual number.

From notes kindly supplied by Dr. Oswin Johnson and Dr. Devlin, I find that they have professionally attended about 200 cases of typhoid during the year. The number of deaths registered as due to this disease is 25. It would thus appear that the disease has attacked about 1 in 16 of the entire population, and killed 1 in 8 of those attacked. A fatality of 12½ per cent. is above the average in metropolitan hospitals. In the Coast Hospital, for instance, in 1893 the fatality was 12 per cent., and in 1894 8 per cent.

The outbreak was still in progress at the time of my visit. There were 18 cases under treatment in the hospital, and many more in the private practices of the doctors.

It would be injudicious to enter into the mode of dissemination, &c., of the disease, since the data at present in my possession do not admit of satisfactory conclusions being drawn from them. At least, I wish to investigate some points more closely before doing so. With the assistance of the Government Medical Officer, I propose to collect the required information, and the result will be presented to the Board as a supplementary report. This work will require some time, and could not be undertaken during my stay in Parkes. I had acquired much information of importance to the community, embracing the knowledge of sanitary defects which ought to be remedied without loss of time. I have therefore deemed it best to present the Report as it now stands, leaving the details of the present outbreak to be dealt with later.

I may, however, state that the evidence, as far as it goes, tends to exclude milk, meat, bread, vegetables, other foods, and beverages (lemonade, &c.), and points to water as the probable means of dissemination. Further than this it would not be safe to go until such facts as may be ascertained by the future investigation have been considered. The question must be left open for the present. In the meantime I beg to submit the following commentary and recommendation.

Typhoid fever, of all diseases, is that which is most closely associated with sanitary defects. Under the various subdivisions of the above Report there has been pointed out such a series of sanitary errors as must have resulted sooner or later in an outbreak of typhoid such as that which has occurred during the present year, and which will, unless rectified, inevitably lead to further outbreaks.

Besides predisposing to typhoid, the defective arrangements in existence are maintaining a high death-rate in the district. Such diseases as diphtheria and bronchitis have claimed many victims. These diseases chiefly kill the young and very old, and consequently do not attract attention as typhoid does, in which the mortality occurs amongst young adults and persons in the prime of life—the bread-winners and persons of importance—who are missed by the community.

It is very evident, therefore, that there is urgent need of attention to sanitary matters.

The outstanding evil in Parkes is in the pollution of the soil. This should be immediately checked, and the means to this end are at hand in the firm enforcement of the existing by-laws for the suppression of nuisances. But, in order to convert the present defective system of dealing with nightsoil and garbage into a satisfactory one, it is necessary that better methods of conservation and removal should be instituted.

In

In every town not provided with sewers provision must be made for the temporary storage of nightsoil on the premises. It is essential that this be so stored as not to be a danger to health. There are several ways of doing this, but a dry-earth system properly carried out would best meet the requirements of Parkes. For such a system to be successful there is need for care on the part of individual householders, efficient sanitary inspection, and a properly-organised scheme of scavenging.

In every closet there must be a suitable pail; the present assortment must be done away with. Anything will not do for a pail. The conditions which must be fulfilled are that the pail must catch all the excreta, liquid as well as solid, and must retain them when caught. Failure in this respect on the part of a few individuals involves a menace to the health of all. Where persons are unable by reason of poverty to buy a suitable pail for themselves the Council should supply one as a matter of public duty. Under other circumstances the purchase of a proper pail must be insisted upon. A duplicate system of pails is the best to aim at. In this system pails of uniform size are used, adapted for being fitted with a spring lid. On removal from the closet the lid is fitted on, and the pail and its contents conveyed to the cart, and taken in it to the depôt to be emptied and cleaned. A clean empty pail is placed in the closet on removal of the full one. The adoption of this system would involve alteration in many of the closets, an alteration which some of them sadly need.

The method, properly managed, is perfectly clean and free from nuisance, and can be carried out in the daytime—a point of great importance.

The need of using abundance of earth or ashes must not be forgotten. This is the basis of the whole system. The dry substance, whatever it be (well-dried garden-mould, ashes or sawdust), must be thrown over the excretions in sufficient quantity to absorb all the liquid. Keep the nightsoil dry, and there will be no nuisance. The Council should direct their Inspector of Nuisances to see that the by-law in this respect is rigidly attended to. It is to the advantage of the Council to make arrangements for the provision of the dry material required.

Experience has taught that the removal of nightsoil is much better done by the Council's own servants than by contractors. The work can be conducted on a definite plan under the immediate supervision of the Inspector of Nuisances, and defects are more easily detected and remedied. The pails should be emptied as often as possible—at least twice a week. The carrying out of a properly-organised system such as that suggested affords the only means of obtaining a satisfactory service, and of preventing grave danger to health.

The by-laws relating to collection and removal of garbage must be enforced. The amount to be removed might be considerably lessened by a greater use of the kitchen fire. The removal should be done by the Council. The garbage, previous to removal, should be stored in a dry place.

It is also a matter of some urgency that the Council should set about draining the town. As this means something more than the making of gutters, it would be cheapest to obtain the advice of a competent engineer.

I have already referred to the pressing need of a new water supply. No effort should be spared to secure this as soon as possible. In the meantime the above-ground tanks probably afford the best water at present available. The tanks should be cleaned out as often as opportunity permits. It is advisable to discontinue the use of water from underground tanks, cemented or not. All water should be boiled before being used for drinking, and, as far as possible, also before being used for household purposes whereby food may be contaminated. The use of germ-proof filters of the Pasteur-Chamberland type would find a useful place in the houses of those who can afford them. Ordinary filters should be steadfastly avoided. In other cases boiling the water gives the greatest safeguard, and it is indeed the best-known means of preventing infection by water-borne diseases such as typhoid fever.

Milk also should be always boiled before use.

The small amount of extra trouble to the individual which the performance of these simple precautions involve confers a great benefit on the community at large. This simple practice of using only boiled water, milk, &c., will, if conscientiously carried out, effectually prevent epidemics of typhoid and other diseases.

The excretions of typhoid patients should be mixed with a sufficient amount of dry material and burnt in the kitchen fire. Linen soiled by the excretions should be removed at once, burnt, or placed in a disinfecting solution, and subsequently well boiled. Soiled floors and utensils should be washed and scrubbed with disinfectant. The persons attending on patients should be most careful to wash their hands before handling food, or going to meals. In short, the greatest possible care should be taken that none of the excretions, neither solid nor liquid, escape destruction or disinfection, for it is by means of the excretions that the infection leaves the patient and becomes conveyed to other persons.

The above recommendations indicate that all general sanitary measures should be attended to by the Council directly. The health of 3,500 people demands an amount of care and precision in details in dealing with drainage, conservation, and removal of refuse, &c., which can only be secured by the direct and active control of a responsible authority. At present these matters are everybody's business, and consequently nobody's. They are in a hopeless muddle. Under the various headings I have purposely given such details as will aid the Council in organising a definite plan. Some such reforms as those suggested will have to be undertaken if outbreaks of disease like the present are to be prevented. The question of cost will have to be considered, of course: money will have to be spent. After the initial outlay, however, the Council should be able to carry on the work as cheaply as the individual householders can. The expense to the community as a whole would be no greater than at present. It must be remembered that reform is not a matter of choice, but of necessity. Unfortunately, typhoid does not remain quiescent whilst expenses are being considered: it is busy destroying valuable lives. It is the outcome of universal experience that this disease can be prevented by efficient sanitary measures. The institution and maintenance of these certainly must be paid for in money, but the neglect of them must be paid for in human lives. Epidemics are very costly; regarded from the most sordid point of view, it is much cheaper to pay in cash.

The President, Board of Health.

I have, &c.,  
FRANK TIDSWELL.

1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

INSANITARY STATE OF THE TOWN OF FORBES.

(REPORT ON.)

*Printed under No. 12 Report from Printing Committee, 6 August, 1896.*

RETURN to an *Order* made by the Honorable the Legislative Assembly of New South Wales, dated 14th July, 1896, That there be laid upon the Table of this House,—

“A copy of Dr. Tidswell’s report on the insanitary state of the town of “Forbes.”

(*Mr. Raymond.*)

SANITARY CONDITIONS IN FORBES.—MAY, 1896.

To the President,—

Sir,

In accordance with your instructions, I visited Forbes, and on May 1st and 2nd inspected certain sanitary matters, under the guidance of the Mayor and Aldermen, and of the Government Medical Officer (Dr. McDonnell). It appeared to me, from conversation with these gentlemen, that their present purpose will be better suited by some critical remarks than by a report in the usual form. I have the honor to submit the following for your approval:—

Nightsoil and Refuse.

In every town which is unsewered provision must be made for—

1. Storing the nightsoil on the premises until such time as it can be removed ;
2. Removing the nightsoil in an efficient and cleanly manner ; and
3. Disposal of the nightsoil in such a way as not to be a nuisance and a danger to health.

In Forbes at the present time the closets are provided sometimes with cesspits, sometimes with pails. Cesspits are numerous, and are merely dug in the ground. Their walls are not impervious, and consequently the liquid soaks away from them into the surrounding soil. They were, as usual with such structures, extremely foul-smelling. Cesspits in a town are bad and dangerous things, and should be abolished.

The pails are of various kinds. In general they are of sufficient capacity, but not always of proper shape, nor placed in a proper position under the closet-seat to catch all the excreta. Most of those I examined contained much decomposing liquid.

A pail system is the best for a town which has no sewers, but it must be managed with great care and attention to details. The pails must be of a suitable size and shape, and must be properly placed. All the excreta, liquid as well as solid, must be caught in them. Some dry substance, such as well-dried garden mould, loamy soil, ashes, &c., should be thrown over the excreta in sufficient amount to absorb all the liquid. This is the basis of the whole system. If the nightsoil be kept dry no nuisance nor danger will arise. The height of pail in relation to the closet-seat must be such that no space intervenes between them. This will prevent the woodwork and ground beneath the closet being polluted with urine. There must also be some arrangement whereby the pail can only be placed in the proper position. Even a superficial inspection will show that both these matters are in general neglected. The pails must be removed as often as possible, probably not less frequently than twice a week. The better the attention to keeping the nightsoil dry the less frequent need the removal be. Under ordinary circumstances the removal of nightsoil is a very dirty business ; owing to carelessness the closet-floors, passages, and lanes become splashed with the liquid refuse.

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A duplicate system is the best to aim at; the pails are of uniform size and are made so as to be closed by a spring lid. On removal from the closet the lid is fitted on, the pail and its contents removed to the cart and conveyed to the depôt to be emptied and washed. A clean empty pail replaces the one removed.

This system, if properly carried out, is perfectly clean, safe, and free from nuisance. The work of removal can be done in the daytime, and so can be supervised and properly conducted.

The efficiency of such a measure demands care on the part of householders, which must be secured by active sanitary inspection, and the institution of an adequate system of scavenging. This can only be hoped for by the council exercising direct control over the work. All experience teaches that the council's own servants will do it much better than contractors. The system is then uniform, defects are easily recognised and remedied, and grave danger to health prevented. To admit of this system some of the closets would need slight alteration, for the seats would have to be the same (or nearly the same) height in all to allow of the interchange of pails.

The same general principles apply to house refuse, stable litter, &c. At present there seems to be no special care of these matters. At North Circle Park, and in some lanes and open spaces, I saw some unsightly deposits of garbage. The refuse should be stored in one particular spot on the premises (a dust-heap), which should be so situated that the garbage can be kept dry. There should be a general instruction that the destructible garbage be burned in the kitchen fire. This will greatly lessen the amount to be dealt with. The removal and disposal should be carried out by the council.

### Slop Water and Drainage.

At present the slop waters of houses are allowed to run into the streets, into which they are often conveyed by box drains. These are bad; they soon become foul and are readily blocked up. Circular pipes are much better. At North Circle Park there is a stinking swamp, into which a large amount of slop water is received. An equally unhealthy condition is presented at the south end of the town, where the waters of a lagoon are polluted in a similar way. Whilst some kinds of slop waters are not harmful, others such as those derived from washing up plates and dishes are dangerous. They contain particles of food, fat, &c., which putrefy and create a nuisance.

It is very necessary that some system of surface drainage should be undertaken in order to deal with these slops. It is the complement of a water supply. The houses may be drained into impervious gutters, and provision made for keeping these clean. But the gutters must lead somewhere, and it would be best for the council to obtain the advice of a competent engineer to devise some scheme for properly draining the town. It would be well under these circumstances to keep in view some system of irrigation whereby sewerage as well as surface drainage might be ultimately dealt with. It is urgent that the condition of things at North Circle Park be immediately put a stop to. This area is in a filthy condition and constitutes a danger to health. The depôt for disposal of nightsoil and garbage should be so situated that no soakage from it can return to the town. There appears to be some doubt whether the Forbes depôt is satisfactory in this respect.

The aim of disposal by burying is that the refuse may be converted as rapidly as possible from organic (noxious) to inorganic (innocuous) material. This change is accomplished by the agency of minute organisms which live in the uppermost few feet of the soil. They do not exist in the deeper layers. Consequently, refuse should not be buried deeper than 6 or 8 feet. Admixture with earth renders the change more rapid by permitting the organisms to reach all parts quickly. The practice of casting the refuse into deep open shafts, as in Forbes, does not altogether amount to deep burial, and it is perhaps a sufficiently good method of disposal, provided the place be isolated. I am of opinion that land used as a depôt should be fenced in, and the public forbidden to trespass upon it.

It will have been noticed that the above suggestions are directed towards keeping the soil pure. It may aid in their appreciation if I briefly sketch the ways in which soil pollution react on the community.

The soil contains water and air, and soil pollution means pollution of this ground water and ground air. The liquid refuse from cesspits, slops, &c., mixes with the ground water, and with it sinks in till an impervious stratum is reached. It then flows along this in the line of natural drainage and ultimately enters a river or stream. The water in wells is also derived from this ground water, and a well actually drains a certain area around it. It is, therefore, easily enough understood how injurious material may be conveyed into water used for drinking purposes. The germs of typhoid fever, for instance, are passed in enormous numbers in the bowel excreta and urine of a person suffering from the disease. The germs can remain alive for many months in the soil and during that time can be carried long distances by the ground water. Reaching a well or river they multiply with extraordinary rapidity, and water thus contaminated with them can produce the disease in persons drinking it. Another way in which water can be contaminated with typhoid germs is by the infective material from the soil being sucked into water-pipes which are laid in it. Epidemics of typhoid have resulted from pollution of water in both of these ways.

The ground air occupies the soil above the water level. Since the level of the underground water is constantly rising and falling with dry and wet weather, air is always being forced out and sucked in. When organic matter in the soil, such as nightsoil or garbage, is decomposing, injurious gaseous products are evolved and mixed with the ground air. These noxious gases exist in abundance in the air over cesspits, and men have been killed by them whilst cleaning out old pits. The gaseous emanations from the soil have often produced serious illness in deep mines, &c. The air of a house is warmer than the air outside, and consequently it tends to rise and be replaced by the air from without. This effect is increased by fires in the house which create actual draughts. Some of the air thus drawn in comes from the soil unless special means are taken to prevent it, such as air-proof basements or an air space between the floor of the house and the ground. Polluted air thus aspirated into the house may produce sickness, especially if it enters bedrooms and be inhaled for long periods, as during sleep. By this means certain sore throats and inflammations of the lungs have been produced, or there may be no definite illness, but simply a lowering of the vitality of the person inhaling it. When an illness comes the individual whose health is so undermined cannot resist it, as a healthy one can. In this way the community is rendered very susceptible to certain diseases.

For these and other reasons it is necessary to take every reasonable means of preventing soil pollution, and it is to secure this end that sanitary authorities have insisted on the necessity of cleanliness in dealing with night-soil, and garbage, and slop waters.

### Water Supply.

Water is obtained from the Lachlan in sufficient quantity to afford a constant supply.

The situation of the intake is by no means free from danger, since there are several houses in its immediate neighbourhood. Typhoid-infected drainage from these houses might so pollute the supply as to cause an epidemic. This is the way typhoid is most commonly spread. Special care must therefore be taken that these houses are maintained in a sanitary state, and that their drainage does not pollute the river water.

The existence of a wool-washing business about a mile above the intake is a very regrettable circumstance. The establishment of this was permitted, I understand, on the condition that no refuse water should be turned into the river. The washings were to be irrigated over the adjacent land. I do not think this is a sufficient safeguard. Slop and drainage waters exist about the premises, situated as they are within a few feet of the river's bank, which must inevitably be carried into the river when rain falls. I found also that much refuse matter was placed actually on the bank of the river. There can be no doubt that some pollution of the river results from this source, and, considering the noxious nature of the business, the pollution is of a most objectionable kind. The water of a running stream undergoes self-purification, but many miles of flow are necessary to secure this end.

From the intake the water is pumped into a service reservoir. The water is said to be filtered, but since this consists of passing it through large loose pieces of sandstone, there is no true filtration of it. It may be mentioned that a properly carried-out method of sand-filtration would be to the advantage of this town. The service, I understand, is not quite sufficient for the needs of the community, and the laying of a new main is under consideration.

The important points to remember in connection with a water supply are, that the water shall be pure in quality and sufficient in quantity. It is necessary, therefore, to jealously guard the source against pollution in the first place, and next to take every precaution against contamination during distribution. The quantity of water required by a community is usually estimated at 30 gallons per head per day.

The above considerations embrace all the matters to which my attention was specially directed. In pointing out defects and suggesting remedies, I am conscious that reforms involve expense. Nevertheless, it is cheaper to institute and maintain efficient sanitary measures than to allow them to be neglected. Once instituted, the business of nightsoil and garbage removal and disposal can be carried out more cheaply by the council than by the householders themselves. The expense to the community as a whole would be less than at present. Some measure of the kind indicated above will sooner or later have to be undertaken, and the expense involved should not be beyond the means of a town like Forbes.

I have, &c.,

FRANK TIDSWELL.

Board of Health, 27th May, 1896.



1896.

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LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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REPORT FROM THE SELECT COMMITTEE

ON

**THE ABATTOIRS ;**

TOGETHER WITH THE

PROCEEDINGS OF THE COMMITTEE,

MINUTES OF EVIDENCE,

AND

APPENDIX.

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*Printed under No. 27 Report from Printing Committee, 13 November, 1896, A.M.*

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SYDNEY : WILLIAM APPELGATE GULLICK, GOVERNMENT PRINTER.

1896.



1896.

EXTRACTS FROM THE VOTES AND PROCEEDINGS OF THE  
LEGISLATIVE ASSEMBLY.

VOTES No. 10. TUESDAY, 2 JUNE, 1896.

13. THE ABATTOIRS:—Mr. Hawthorne moved, pursuant to Notice, That a Select Committee be appointed to inquire into and report upon,—

- (1.) The past and present management of the Abattoirs at Glebe Island.  
 (2.) The advisability or otherwise of the removal of the present Abattoirs to another locality.  
 (3.) The probable cost and route of a branch railway line from the main trunk line to Glebe Island, for the carrying of cattle and sheep, with the object of abolishing the present cattle-driving nuisance through the western suburbs."

(4.) That such Committee consist of Mr. Reid, Mr. Russell Jones, Mr. Bavister, Mr. Mahony, Mr. Frank Farnell, Mr. Law, Mr. O'Sullivan, Mr. Harris, Mr. Parkes, and the Mover.  
 Debate ensued.

Mr. Macdonald moved, That the Question be amended by leaving out paragraph (3).  
 Question proposed,—That the words proposed to be left out stand part of the Question.  
 Debate continued.

Question put,—That the words proposed to be left out stand part of the Question.  
 The House divided.

Ayes, 10.	Noes, 47.
Mr. Fegan, Mr. McLaughlin, Mr. McLean, Mr. Wilks, Mr. J. C. L. Fitzpatrick, Mr. Harvey, Mr. Harris, Mr. Millard.  <i>Tellers,</i> Mr. Law, Mr. Hawthorne.	Mr. Ferguson, Mr. Copeland, Dr. Ross, Mr. Schey, Mr. O'Sullivan, Mr. See, Mr. Willis, Mr. Dacey, Mr. Watkins, Mr. Hughes, Mr. Brunker, Mr. Chapman, Mr. FitzGerald, Mr. Waddell, Mr. Carroll, Mr. Pycers, Mr. Hurley,  Mr. Travers Jones, Mr. Macdonald, Mr. Cotton, Mr. Howarth, Mr. Mahony, Mr. Sydney Smith, Mr. Cann, Mr. McGowen, Mr. Archibald Campbell, Mr. Hogue, Mr. Thomas, Mr. Anderson, Mr. Thomas Brown, Mr. Collins, Mr. Afleck, Mr. Reid, Mr. Whiddon,  Mr. Ball, Mr. Lonsdale, Mr. Jessep, Mr. Garrard, Mr. Black, Mr. Dick, Mr. Morgan, Mr. O'Reilly, Mr. Cook, Mr. Newman, Mr. Young.  <i>Tellers,</i> Mr. Watson, Mr. Moore.

And so it passed in the negative.

And Mr. Hogue requiring that the Committee be appointed by Ballot,—

Question, as amended, then put,—That a Select Committee be appointed to inquire into and report upon,—

- (1.) The past and present management of the Abattoirs at Glebe Island.  
 (2.) The advisability or otherwise of the removal of the present Abattoirs to another locality.  
 (3.) That such Committee consist of \* \* \* \* \*

The House divided.

Ayes, 51.	Noes, 9.
Mr. Brunker, Mr. Fegan, Mr. Young, Mr. Garrard, Mr. McLaughlin, Mr. Reid, Mr. See, Mr. Sydney Smith, Mr. McGowen, Mr. Smailes, Mr. Thomas, Mr. Wilks, Mr. Hogue, Mr. Macdonald, Mr. Cotton, Mr. Hughes, Mr. McLean, Mr. J. C. L. Fitzpatrick,  Mr. Watkins, Mr. Thomas Brown, Mr. Harrey, Mr. O'Sullivan, Mr. Bavister, Mr. Ball, Mr. Pycers, Mr. Millard, Mr. Jessep, Mr. Harris, Mr. Dacey, Mr. Hurley, Mr. Mahony, Mr. O'Reilly, Mr. Dick, Mr. Willis, Mr. Cook, Mr. Newman,  Mr. Schey, Mr. Morgan, Mr. Collins, Mr. Howarth, Mr. Chapman, Mr. Travers Jones, Mr. Cann, Mr. Waddell, Mr. Watson, Mr. Anderson, Dr. Ross, Mr. Copeland, Mr. FitzGerald.  <i>Tellers,</i> Mr. Hawthorne, Mr. Law.	Mr. Carroll, Mr. Edden, Mr. Whiddon, Mr. Lonsdale, Mr. Black, Mr. Afleck, Mr. Archibald Campbell.  <i>Tellers,</i> Mr. Ferguson, Mr. Moore.

And so it was resolved in the affirmative.

Whereupon the House proceeded to Ballot; and Mr. Speaker declared the following to be the Committee duly appointed:—Mr. Hawthorne, Mr. Brunker, Mr. Hassall, Mr. Law, Mr. Bavister, Mr. Mahony, Mr. O'Sullivan, Mr. Wilks, Mr. Willis, and Mr. McElhone.

## VOTES No. 55. TUESDAY, 15 SEPTEMBER, 1896.

- 8 THE ABATTOIRS (*Formal Motion*):—Mr. Hawthorne moved, pursuant to Notice, That the Select Committee now sitting on "The Abattoirs" have leave to make visits of inspection, from time to time, accompanied by a shorthand-writer, to Abattoirs within the Colonies, for the purpose of holding inquiries and taking evidence, and that the Committee have leave to sit during the sittings of the House, or any adjournment thereof, for the purpose of making such visits of inspection. Question put and passed.
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## VOTES No. 51. THURSDAY, 12 NOVEMBER, 1896.

6. THE ABATTOIRS:—Mr. Hawthorne, as Chairman, brought up the Report from, and laid upon the Table the Minutes of Proceedings of, and Evidence taken before, the Select Committee for whose consideration and report this subject was referred on 2nd June, 1896; together with Appendix. Referred by Sessional Order to the Printing Committee.
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**THE ABATTOIRS.**


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**REPORT.**


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THE SELECT COMMITTEE of the Legislative Assembly, appointed on 2nd June, 1896, "to inquire into and report upon (1) *The past and present management of the Abattoirs at Glebe Island*; (2) *the advisability or otherwise of the removal of the present Abattoirs to another locality*,"—and to whom was granted on 15th September, 1896, "leave to make visits of inspection, from time to time, accompanied by a shorthand-writer, to Abattoirs within the Colonies, for the purpose of holding inquiries and taking evidence, and leave to sit during the sittings of the House or any adjournment thereof, for the purpose of making such visits of inspection,"—have agreed to the following Report:—

Your Committee, having taken a considerable amount of evidence, and paid visits of inspection to the Abattoirs and chilling and meat-preserving works in Melbourne, Brisbane, Aberdeen (N. S. Wales,) and Sydney, have arrived at the following conclusions:—

1. That it is desirable that the Government encourage in every possible way the killing of stock and chilling of meat in the country districts. In connection with this aspect of the question they would suggest that an expert inspector should be appointed for each establishment, as there is reason to believe that the present system of inspection is far from being a satisfactory one. The plan worked so successfully in Queensland by having a Dairy and Meat Board, might with advantage be considered by the Government of New South Wales; and better accommodation for the sale and shipment of frozen or chilled meat might, at the same time, be accorded by the Government.

2. Your Committee consider that it is absolutely necessary to have a central Abattoirs in or near the city of Sydney, in order to dispose of the large number of calves, pigs, lambs, and other stock which come from the coastal districts, as well as to supply the demand of those who prefer to have their meat fresh, and have an objection to chilled or frozen meat.

3. This point being conceded, the question of site for the Abattoirs then arises. Three positions claim attention. The first is that near Blacktown, where there is said to be a large area of land available and abundance of water at hand for cleansing purposes. The second is the Wentworth Estate, at Flemington, adjoining the present stock sale-yards, where there is also a considerable area of land, with a frontage on the Parramatta River, and will be shortly connected with the main sewer of Sydney. The third is the so-called Glebe Island (or peninsula), where the present Abattoirs are situated, to which cattle and sheep have now to be driven from the sale-yards.

4. With regard to the Blacktown site, it may be dismissed at once as being too distant from the city for the position of an Abattoirs. The evidence goes to show that even at present there is a considerable amount of killing done in private establishments (without inspection), and if the Abattoirs were placed at the proposed site near Blacktown (22 miles from Sydney) this evil would undoubtedly largely increase.

increase. The Wentworth Estate, near Flemington (9 miles from Sydney), is a better situation, but that also is somewhat too far for the majority of the butchers to go for their meat. It is to be feared that this distance, although much shorter than that at Blacktown, would also tend to the practice of private killing. The argument applied on behalf of both the Blacktown and Wentworth Estate sites, that there would be in each case a large area of land for resting or grazing paddocks, does not hold good. Sixty thousand sheep and nearly 2,500 head of cattle are sold every week at Flemington, and that number of stock would eat all the grass that was available at either of the sites mentioned, and when the first week's stock had eaten off the grass where would be the sustenance for those that followed? It is, therefore, not wise for the State to invest a large sum of money in the purchase of either of the estates referred to on the assumption that they would be required for resting or grazing purposes. Stock are driven to Flemington, as a rule, for slaughtering purposes, and there is, therefore, no necessity for grazing paddocks for them.

5. There remains, then, the Glebe Island site to be considered; and your Committee consider that it is admirably adapted for the purposes of Abattoirs and the shipment of meat. The objections against driving sheep and cattle to Glebe Island may be disposed of by the construction of a branch railway from the Abattoirs to a point on the main line of railway between Petersham and Summer Hill. A route almost free from buildings could be chosen, and, therefore, the cost of constructing the proposed railway ought not to be great. Trucking-yards already exist at Flemington for the purpose of sending stock to Bowral, Moss Vale, Katoomba, Mount Victoria, and other points on the railway system, for which purchases are frequently made at the sale-yards. The present Abattoirs are too heavily built, and there is a scarcity of room in the pens and an insufficiency of light. Its machinery is obsolete and unsuitable, and the Abattoirs themselves are in a somewhat dirty condition. These might be abolished altogether, and a new establishment laid out on the north-eastern side of the peninsula, where there are about 50 acres of Government land with water frontage. Here a set of Abattoirs should be built on the pavilion plan, as in Paris, so that plenty of light and fresh air might penetrate the establishment, good drainage be provided, and an equality of position ensured for those engaged in the trade. The building should be constructed upon the latest scientific principles, and ample room should be given in each pen for slaughtering purposes. In connection with the Abattoirs a meat market might be established for Balmain, Pyrmont, the Glebe, Annandale, Leichhardt, and other contiguous suburbs. Chilling and meat-freezing establishments might also be established near the Abattoirs, and proper wharfage accommodation given for large vessels to call there and load, as well as for coastal vessels to unload their stock near the slaughtering-houses. With regard to resting paddocks, there is ample room for these in the reclaimed reserve at White Bay, which adjoins the Abattoirs. If a high wall were erected around the reserve and the Abattoirs, no offensive sights would be apparent to the public, and there is abundance of splendid stone on the Island for the construction of these walls. The stock could be brought from Flemington to Glebe Island by rail, so that a dangerous nuisance which now exists would thus be obviated.

6. There remains the question as to whether the presence of an Abattoirs in a thickly-populated neighbourhood is not a detriment to the public health. On this point the evidence goes to show that, given the most modern and approved machinery for desiccating, &c., there is no danger whatever to the public health in a properly-conducted, cleanly-kept Abattoirs. In Chicago, Glasgow, Liverpool, Paris, Brisbane, Melbourne, Aberdeen (N.S.W.), and other places where the slaughtering of stock takes place in populous localities, no injury to the public health whatever is caused by the practice, and there is no reason why the Abattoirs of Sydney should not be rendered as innocuous as these establishments. The by-products of the Sydney Abattoirs now run to waste, and are taken out to the ocean at great expense, but there is no reason why these should not be turned to profitable account. At Bourke and Aberdeen, and elsewhere in New South Wales, at Melbourne, and at Queensport, near Brisbane, the by-products are the source of considerable profit to the proprietors of the works, where they are treated, and the same state of things should exist with regard to the Sydney Abattoirs. The vicinity of Glebe Island to the city is a great convenience to the retail butchers, and its existence is a deterrent to the system of private killing. Above all, a central Abattoirs, near Sydney, affords the  
means

means of a thorough system of inspection, and thus the public health is preserved from injury through diseased meat. The present Abattoirs might be demolished as soon as the new ones are erected, and the land they occupy used for wharfage or other purposes. With the reserve at White Bay there is ample room on the Glebe Island for Abattoirs, resting yards, markets, chilling works, and wharfs for several generations to come, and as the whole of the land referred to is Crown property there would be no occasion for expensive resumptions, while there is an ample supply of stone for building purposes on the Island.

7. In view of the tenacious character of tuberculosis, your Committee would recommend that strenuous steps should be taken to prevent diseased meat from being utilised as manure. It should be used for boiling-down purposes only, and the refuse should then be destroyed by fire, as the spreading of diseased meat over fields may propagate more tuberculosis, and thus endanger the public health. To prevent these and other abuses, however, more inspectors should be appointed, responsible to the Government alone, as it is evident that six inspectors are not sufficient to thoroughly do the work of examination at Abattoirs like those of Glebe Island.

8. Your Committee would suggest to the Government the desirableness of considering whether some steps should not be taken to prevent the public from being compelled to pay the excessive prices occasionally charged for meat. It might even be a wise proceeding for the Government themselves to work the Abattoirs in the public interest. If such a system were established, the public would obtain their meat at a cheaper rate, and there would then be no temptation to foist diseased meat on the market to the prejudice of the public health. The suggestion embodies an innovation, but the importance of the matter to the general public would more than justify such a departure from the ordinary functions of government.

J. STUART HAWTHORNE,  
Chairman.

*No. 1 Committee Room,  
Legislative Assembly,  
11th November, 1896.*

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PROCEEDINGS OF THE COMMITTEE.

WEDNESDAY, 10 JUNE, 1896.

MEMBERS PRESENT:—

Mr. Hawthorne,		Mr. Mahony,
Mr. Law,		Mr. Wilks,
	Mr. Willis.	

Mr. Hawthorne called to the Chair.

Entry from Votes and Proceedings, appointing the Committee, read by the Clerk.

Committee deliberated.

*Resolved (on motion of Mr. Law)*,—That the Chairman obtain leave of the House for the Committee to make visits of inspection from time to time to Abattoirs within the Colonies for the purpose of holding inquiries and taking evidence, and that the Committee have leave to sit during the sittings of the House, or any adjournment thereof, for the purpose of making such visits of inspection.

Reassembling of the Committee to be arranged by the Chairman.

[Adjourned.]

WEDNESDAY, 17 JUNE, 1896.

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.		
Mr. Bavister,		Mr. O'Sullivan,
Mr. Law,		Mr. Wilks,
	Mr. Willis.	

Committee deliberated.

Reassembling of the Committee to be arranged by the Chairman.

[Adjourned.]

THURSDAY, 2 JULY, 1896.

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.		
Mr. Law,		Mr. Wilks.

Committee deliberated.

*Resolved (on motion of Mr. Law)*,—That the Committee wait on the Premier, and report to another meeting on Tuesday next, at 3 o'clock, the result of the interview, respecting the providing of funds for a quorum of members to visit the Abattoirs in the leading capitals of the Australian Colonies.

[Adjourned till Tuesday next at 3 o'clock.]

TUESDAY, 7 JULY, 1896.

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.		
Mr. Bavister,		Mr. O'Sullivan,
	Mr. Wilks.	

Committee deliberated.

Reassembling of the Committee to be arranged by the Chairman.

[Adjourned.]

WEDNESDAY, 12 AUGUST, 1896.

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.		
Mr. Bavister,		Mr. Law,
	Mr. O'Sullivan.	

Committee deliberated.

[Adjourned till Tuesday next at 2:30 o'clock.]

TUESDAY,

TUESDAY, 18 AUGUST, 1896.

MEMBERS PRESENT :—

Mr. Hawthorne in the Chair.

Mr. Bavister,           |           Mr. Law,  
                                  |           Mr. Wilks.

Henry Brisbane Swan called in, sworn, and examined.

Witness withdrew.

Archibald McNeill called in, sworn, and examined.

Witness withdrew.

John Blowes Collerson called in, sworn, and examined.

Witness withdrew.

[Adjourned till Thursday next at 2:30 o'clock.]

THURSDAY, 20 AUGUST, 1896.

MEMBERS PRESENT :—

Mr. Hawthorne in the Chair.

Mr. Law,               |           Mr. Wilks.

John Blowes Collerson recalled and further examined.

Witness withdrew.

William John Spencer (*Editor, Australian Meat Trades Journal*) called in, sworn, and examined.

Witness withdrew.

[Adjourned till Tuesday next at 2:15 o'clock.]

TUESDAY, 25 AUGUST, 1896.

MEMBERS PRESENT :—

Mr. Bavister,           |           Mr. Law,  
                                  |           Mr. Wilks.

In the absence of the Chairman, Mr. Wilks called to the Chair *pro tem*.

Henry William Austin called in, sworn, and examined.

At this stage the Chairman entered the room and took the Chair.

Witness withdrew.

Charles Thompson called in, sworn, and examined.

Witness withdrew.

Arthur Grey Kenway called in, sworn, and examined.

[Adjourned till Thursday next at 2:15 o'clock.]

THURSDAY, 27 AUGUST, 1896.

MEMBERS PRESENT :—

Mr. Hawthorne in the Chair.

Mr. Bavister,           |           Mr. Law,  
                                  |           Mr. O'Sullivan.

Arthur Grey Kenway recalled and further examined.

Witness withdrew.

[Adjourned till Tuesday next at 2:30 o'clock.]

TUESDAY, 1 SEPTEMBER, 1896.

MEMBERS PRESENT :—

Mr. Hawthorne in the Chair.

Mr. Bavister,           |           Mr. Wilks.

Arthur Grey Kenway recalled and further examined.

Witness withdrew.

[Adjourned till Thursday next at 2:30 o'clock.]

THURSDAY, 3 SEPTEMBER, 1896.

MEMBERS PRESENT :—

Mr. O'Sullivan,       |           Mr. Wilks.

In the absence of a quorum the meeting called for this day lapsed.

WEDNESDAY, 9 SEPTEMBER, 1896.

MEMBERS PRESENT :—

Mr. Law,               |           Mr. McElhone.

In the absence of a quorum the meeting called for this day lapsed.

TUESDAY, 15 SEPTEMBER, 1896.

MEMBERS PRESENT:—

Mr. Law,		Mr. O'Sullivan,
Mr. Mahony,		Mr. Wilks.

In the absence of the Chairman, Mr. Wilks called to the Chair *pro tem*.  
Arthur Grey Kenway further examined.  
At this stage the Chairman entered the room and took the Chair.  
Witness withdrew.

[Adjourned till Thursday next at 2:30 o'clock.]

THURSDAY, 17 SEPTEMBER, 1896.

MEMBERS PRESENT:—

Mr. Bavister,		Mr. O'Sullivan,
Mr. Law,		Mr. Wilks,
	Mr. Willis.	

In the absence of the Chairman, Mr. Wilks called to the Chair *pro tem*.  
Alfred Allen called in, sworn, and examined.  
The Chairman at this stage entered the room and took the Chair.  
Witness handed in plan of an abattoir [*Appendix A 1*], and report on the Abattoirs at Glebe Island [A 2].  
Witness withdrew.  
Arthur Grey Kenway further examined.  
Witness withdrew.

[Adjourned till Tuesday next at 3 o'clock.]

TUESDAY, 22 SEPTEMBER, 1896.

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.

Mr. Bavister,		Mr. Law,
	Mr. Wilks.	

Entry from Votes and Proceedings granting leave to the Committee to make visits of inspection &c., read by the Clerk.  
Committee deliberated.  
*Resolved (on motion of Mr. Wilks)*,—That the Committee at its next meeting proceed to Melbourne.  
[Adjourned till Friday next at 4:30 p.m.]

FRIDAY, 25 SEPTEMBER, 1896.

MEMBERS PRESENT:—

Mr. Hawthorne (*Chairman*).

Mr. Bavister,		Mr. Law,
	Mr. Wilks.	

The Committee proceeded by express train to Melbourne.

AT MELBOURNE.

MONDAY, 28 SEPTEMBER, 1896.

The Committee proceeded on a visit of inspection to the Abattoirs at Flemington, and afterwards met in a room at the "Grand Hotel," Melbourne.

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.

Mr. Bavister,		Mr. Law,
	Mr. Wilks.	

John Robertson (*Superintendent of the City Abattoirs, and Inspector of the Cattle Market*) examined.

TUESDAY, 29 SEPTEMBER, 1896.

The Committee proceeded on a visit of inspection to the Abattoirs and freezing-works at Newport.

MEMBERS PRESENT:—

Mr. Hawthorne (*Chairman*).

Mr. Bavister,		Mr. Law,
	Mr. Wilks.	

John Maggs (*Clerk in charge of the Works*) examined.  
The Committee then proceeded to inspect the Abattoirs at Williamstown.  
Henry Smith examined.

## 11

The Committee having returned to Melbourne, met in a room at the Town Hall.

William Strong (*Mayor of Melbourne*) examined.

John Clayton (*Town Clerk*) examined.

Witness handed in plan, showing site of Abattoirs [*Appendix B 1*]; Return, showing the number of stock slaughtered at the Abattoirs, and the number condemned [*Appendix B 2*]; Regulation for the management of the Abattoirs [*Appendix B 3*]; Special Regulation to prevent the manipulation of a carcass so as to remove signs of disease [*Appendix B 4*]; By-laws regulating the carriage of meat through the streets of the city [*Appendices B 5 and 6*]; Reports by the City Surveyor, Melbourne, on the desiccating works, City Abattoirs [*Appendices B 7 and 8*]; Description of the pig slaughter-houses, City Abattoirs [*Appendix B 9*].

The Committee left for Sydney by the express train at 5.15 p.m.

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WEDNESDAY, 30 SEPTEMBER, 1896.

The Committee having returned to Sydney,—

Reassembling to be arranged by the Chairman.

[Adjourned.]

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THURSDAY, 1 OCTOBER, 1896.

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.

Mr. Law,		Mr. Wilks,
Mr. O'Sullivan,		Mr. Willis.

*Resolved (on motion of Mr. O'Sullivan),—*That the Committee proceed by train to Brisbane on Sunday evening next.

[Adjourned.]

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WEDNESDAY, 7 OCTOBER, 1896.

MEMBERS PRESENT:—

Mr. Bavister,		Mr. O'Sullivan,
Mr. Law,		Mr. Wilks.

In the absence of the Chairman, Mr. O'Sullivan called to the Chair *pro tem*.

*Resolved (on motion of Mr. Bavister),—*That the Committee proceed to Aberdeen (N.S.W.) by train at 9 a.m. on Friday next, thence to Brisbane.

[Adjourned till Friday next at 8.30 o'clock a.m.]

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FRIDAY, 9 OCTOBER, 1896.

MEMBERS PRESENT:—

Mr. Hawthorne (Chairman).

Mr. Bavister,		Mr. Law,
		Mr. Wilks.

The Committee proceeded by train to Aberdeen.

AT ABERDEEN.

Committee inspected Aberdeen Meat Company's Works, and afterwards met in the manager's room.

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.

Mr. Bavister,		Mr. Law,
		Mr. Wilks.

William Anthony Benn (*Manager of the Aberdeen Meat Company's Works*) sworn and examined. Committee then proceeded by train to Brisbane.

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SATURDAY, 10 OCTOBER, 1896.

The Committee held a meeting in the train between Glen Innes and Tenterfield.

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.

Mr. Bavister,		Mr. O'Sullivan,
Mr. Law,		Mr. Wilks.

Arthur Richmond Morton (*Manager of the Tenterfield Meat Freezing Works*) sworn and examined. The Committee having arrived at Brisbane,—

AT BRISBANE.

MONDAY, 12 OCTOBER, 1896.

The Committee proceeded by steamer to Queensport, and inspected the Graziers' Meat Export Works, and then to Eagle Farm, and inspected the Queensland Meat Export and Agency Company's (Limited) Works.

ON THE STEAMER "MINER."

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.

Mr. Bavister,		Mr. Law,
Mr. O'Sullivan,		Mr. Wilks.

John Vigers Francis (*Manager of Graziers' Meat Export Company*) examined.David Traill (*Manager of the Queensland Meat Export and Agency Company, Limited*) examined.

[The Committee, having returned to Brisbane, adjourned.]

TUESDAY, 13 OCTOBER, 1896.

The Committee proceeded to South Brisbane, and inspected Messrs. Birt and Company's (Brisbane Meat Company's) Works.

The Committee met in a room at the Customs Office, Musgrave Wharf.

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.

Mr. Bavister,		Mr. Law,
Mr. O'Sullivan,		Mr. Wilks.

John Genge Andrews Peddle (*Manager of the Brisbane Meat Company's Works*) examined.

Russell Sinclair examined.

Patrick Robertson Gordon (*Chief Inspector of Stock*) examined.

The Committee left by train for Sydney at 6:50 p.m.

WEDNESDAY, 14 OCTOBER, 1896.

The Committee having returned to Sydney,—

Reassembling to be arranged by the Chairman.

[Adjourned.]

TUESDAY, 20 OCTOBER, 1896.

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.

Mr. Bavister,		Mr. Law,
Mr. O'Sullivan,		Mr. Wilks.

*Resolved (on motion of Mr. Law),—*That the Committee proceed to Adelaide by express train at 5:15 p.m. on Friday next.

[Adjourned till To-morrow at 2 o'clock.]

WEDNESDAY, 21 OCTOBER, 1896.

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.

Mr. Bavister,		Mr. Law,
Mr. O'Sullivan,		Mr. Wilks.

John Ashburton Thompson (*Chief Medical Officer of the Government and President of the Board of Health*) called in, sworn, and examined.

Witness withdrew.

Thomas Harry Houghton, A.M.I.C.E., called in, sworn, and examined.

Witness withdrew.

[Adjourned till To-morrow at 2:30 o'clock.]

THURSDAY,

THURSDAY, 22 OCTOBER, 1896.

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.

Mr. Law,		Mr. O'Sullivan,
		Mr. Wilks.

Francis Kirkpatrick (*Under Secretary for Finance and Trade*) called in, sworn, and examined.

Witness withdrew.

Edmund Compton Batt called in, sworn, and examined.

Witness *handed in* tracing showing proposed site for Abattoirs at Blacktown, and additional tracing showing proposed loopline connecting Blacktown and Doonside. [*Appendices C 1 and 2.*]

Witness withdrew.

[Adjourned.]

THURSDAY, 29 OCTOBER, 1896.

MEMBERS PRESENT:—

Mr. Bavister,		Mr. Law,
		Mr. O'Sullivan.

In the absence of the Chairman, Mr. O'Sullivan called to the Chair *pro tem*.

*Resolved (on motion of Mr. Bavister)*,—That the Committee proceed on a visit of inspection to the Glebe Island Abattoirs on Monday next, and to the Wentworth Estate on Thursday next.

[Adjourned till Monday next at 1:30 o'clock.]

MONDAY, 2 NOVEMBER, 1896.

MEMBERS PRESENT:—

Mr. Bavister,		Mr. Law,
Mr. O'Sullivan,		Mr. Wilks.

In the absence of the Chairman, Mr. O'Sullivan called to the Chair *pro tem*.

Committee proceeded on a visit of inspection to the Abattoirs at Glebe Island.

And having returned,—

[Adjourned till Thursday next, at 9:30 o'clock.]

THURSDAY, 5 NOVEMBER, 1896.

The meeting called for this day postponed by order of the Chairman.

WEDNESDAY, 11 NOVEMBER, 1896.

MEMBERS PRESENT:—

Mr. Hawthorne in the Chair.

Mr. Law,		Mr. Mahony,
Mr. O'Sullivan,		Mr. Wilks.

Chairman submitted Draft Report, which was read a first time as follows:—

#### DRAFT REPORT.

THE SELECT COMMITTEE of the Legislative Assembly, appointed on 2nd June, 1896, "to inquire into and report upon (1) *The past and present management of the Abattoirs at Glebe Island*; (2) *the advisability or otherwise of the removal of the present Abattoirs to another locality*," and to whom was granted on 15th September, 1896, "*leave to make visits of inspection, from time to time, accompanied by a shorthand-writer, to Abattoirs within the Colonies, for the purpose of holding inquiries and taking evidence, and leave to sit during the sittings of the House or any adjournment thereof, for the purpose of making such visits of inspection*,"—have agreed to the following Report:—

Your Committee, having taken a considerable amount of evidence, and paid visits of inspection to the Abattoirs and chilling and meat-preserving works in Melbourne, Brisbane, Aberdeen, and Sydney, have arrived at the following conclusion:—

1. That it is desirable that the General Board encourage in every possible way the killing of stock and chilling of meat in the country districts. In connection with this aspect of the question, they would suggest that an expert inspector should be appointed for each establishment, as there is reason to believe that the present system of inspection is far from being a satisfactory one. The plan worked so successfully in Queensland by having a Dairy and Meat Board, with power to advance money as loans on long terms, might, with great advantage to the State, be adopted in New South Wales; and better accommodation for shipping frozen or chilled meat might, at the same time, be accorded by the Government. More generous railway freights would also be of material assistance to this great industry.

2. Your Committee consider that it is absolutely necessary to have a central Abattoirs in or near the city of Sydney, in order to dispose of the large number of calves, pigs, lambs, and other stock which come from the coastal districts, as well as to supply the demand of those who prefer to have their meat fresh, and have an objection to chilled or frozen meat.

3. This point being conceded, the question of site for the Abattoirs then arises. Three positions claim attention. The first is that near Blacktown, where there is said to be a large area of land available and abundance of water at hand for cleansing purposes. The second is the Wentworth Estate, at Flemington,

Flemington, adjoining the present stock sale-yards, where there is also a considerable area of land, with a frontage on the Parramatta River, and will be shortly connected with the main sewer of Sydney. The third is the so-called Glebe Island (or peninsular), where the present Abattoirs are situated, to which cattle and sheep have now to be driven from the sale-yards.

4. With regard to the Blacktown site, it may be dismissed at once as being too distant from the city for the position of an Abattoirs. The evidence goes to show that even at present there is a considerable amount of killing done in private establishments (without inspection), and if the Abattoirs were placed at the proposed site near Blacktown (22 miles from Sydney) this evil would undoubtedly largely increase. The Wentworth Estate, near Flemington (9 miles from Sydney), is a better situation, but that also is somewhat too far for the majority of the butchers to go for their meat. It is to be feared that this distance, although much shorter than that at Blacktown, would also tend to the establishment of private killing. The argument applied on behalf of both the Blacktown and Wentworth Estate sites, that there would be in each case a large area of land for resting or grazing paddocks, does not hold good. Sixty thousand sheep and nearly 2,500 head of cattle are sold every week at Flemington, and that number of stock would eat all the grass that was available at either of the sites mentioned, and when the first week's stock had eaten off the grass where would be the sustenance for those that followed? It is, therefore, not wise for the State to invest a large sum of money in the purchase of either of the estates referred to on the assumption that they would be required for resting or grazing purposes. Stock are driven to Flemington, as a rule, for slaughtering purposes, and there is, therefore, no necessity for grazing paddocks for them.

5. There remains, then, the Glebe Island site to be considered; and your Committee consider that it is admirably adapted for the purpose of Abattoirs and the shipment of meat. The objections against driving sheep and cattle to Glebe Island may be disposed of by the construction of a branch railway from the Abattoirs to a point on the main line of railway between Petersham and Summer Hill. A route almost free from buildings could be chosen, and, therefore, the cost of constructing the proposed railway ought not to be great. Trucking-yards already exist at Flemington for the purpose of sending stock to Bowral, Moss Vale, Katoomba, Mount Victoria, and other points on the railway system, for which purchases are frequently made at the sale-yards. The present Abattoirs are too heavily built, and there is a scarcity of room in the pens and an insufficiency of light. Its machinery is obsolete and unsuitable, and the Abattoirs themselves are in a somewhat dirty condition. These might be abolished altogether, and a new establishment laid out on the north-eastern side of the peninsular, where there are about 70 acres of Government land with water frontage. Here a set of Abattoirs should be built on the pavilion plan, as in Paris, so that plenty of light and fresh air might penetrate the establishment, and good drainage be provided. The building should be constructed mainly of iron, and ample room should be given in each pen for slaughtering purposes. In connection with the Abattoirs a meat market might be established for Balmain, Pyrmont, the Glebe, Annandale, Leichhardt, and other contiguous suburbs. Chilling and meat-freezing establishments might also be established near the Abattoirs, and proper wharfage accommodation given for large vessels to call there and load, as well as for coastal vessels to unload their stock near the slaughtering-houses. With regard to resting paddocks, there is ample room for these in the reclaimed reserve at White Bay, which adjoins the Abattoirs. If a high wall were erected around the reserve and the Abattoirs, no offensive sights would be apparent to the public, and there is abundance of splendid stone on the Island for the construction of these walls. The stock could be brought from Flemington to Glebe Island by night by rail, so that a dangerous nuisance which now exists would thus be obviated.

6. There remains the question as to whether the presence of an Abattoirs in a thickly-populated neighbourhood is not a detriment to the public health. On this point the evidence goes to show that, given the most modern and approved machinery for desiccating, &c., there is no danger whatever to the public health in a properly conducted, cleanly-kept Abattoirs. The men now working at Glebe Island appear to be robust and healthy, and beyond an offensive smell—which could be obviated by the effective and modern treatments of the offal and refuse. In Chicago, Glasgow, Liverpool, Paris, Deptford, Brisbane, Melbourne, Aberdeen (N.S.W.), and other places where the slaughtering of stock takes place in populous localities, no injury to the public health whatever is caused by the practice, and there is no reason why the Abattoirs of Sydney should not be rendered as innocuous as these establishments. The by-products of the Sydney Abattoirs now run to waste, and are taken out to the ocean at great expense, but there is no reason why these should not be turned to good account. At Bourke and Aberdeen, and elsewhere in New South Wales and Melbourne, at Queensport, near Brisbane, the by-products are the source of considerable profit to the proprietors of the works, where they are treated, and there is no reason why the same state of things should not exist with regard to the Sydney Abattoirs. The vicinity of Glebe Island to the city is a great convenience to the retail butchers, and its existence is a deterrent to the system of private killing. Above all, a central Abattoirs, near Sydney, affords the means of a thorough system of inspection, and thus the public health is preserved from injury through diseased meat. The present Abattoirs might be demolished as soon as the new ones are erected, and the land it occupies sold for wharfage or other business purposes. With the reserve at White Bay there is ample room on the Glebe Island peninsular for Abattoirs, resting yards, markets, chilling works, and wharfs for several generations to come, and as the whole of the land referred to is Crown property there would be no occasion for expensive resumptions, while there is an ample supply of stone for building purposes on the Island.

7. Your Committee desire to call attention to the fact that a great deal of the condemned meat at the Abattoirs appears to be afterwards utilised for the purpose of poultry-feeding, and it is said that a portion of the condemned meat finds its way into the reservoir, from which the refuse is run into punts to be taken out to sea. This would suggest the idea that after the diseased portion of a carcase is cut out the remainder is sold for human consumption. Your Committee would recommend that a searching inquiry should be made into this aspect of the matter, and if the practice is found to exist a severe penalty should be imposed for the offence. In view of the tenacious character of tuberculosis, your Committee would recommend that strenuous steps should be taken to prevent the diseased meat from being utilised as manure. It should be used for boiling-down purposes only, and the refuse should then be destroyed by fire, as the spreading of diseased meat over fields may propagate more tuberculosis, and thus endanger the public health. To prevent these and other abuses, however, more inspectors should be appointed, responsible to the Government alone, as it is evident that six inspectors are not sufficient to thoroughly do

the

the work of examination at Abattoirs like those of Glebe Island. An experienced inspector should also be appointed for each chilling or freezing establishment, in order to see that none but sound meat is exported or used locally for consumption.

8. Your Committee would suggest to the Government the desirableness of considering whether some steps should not be taken to prevent the public from being compelled to pay the excessive prices occasionally charged for meat. It might even be a wise proceeding for the Government themselves to work the Abattoirs in the public interest. If such a system were established, the public would obtain their meat at a cheaper rate, and there would then be no temptation to foist diseased meat on the market to the prejudice of the public health. The suggestion embodies an innovation, but the importance of the matter to the general public would more than justify such a departure from the ordinary functions of government.

9. In conclusion, your Committee would suggest that the Government should, by the construction of the railway proposed in paragraph 5, as speedily as possible put an end to the cattle-driving nuisance, which is a cause of irritation, loss, and danger to a large number of people resident in the western suburbs, also Drummoyne and Balmain, and is, according to reliable witnesses, injurious to the cattle, and consequently deteriorates the quality of the meat supplied to the public.

Report considered.

Paragraph 1 read.

And certain amendments having been made,—Mr. Wilks moved the omission in line 8 of the words "More generous railway freights would also be of material assistance to this great industry."

Question put,—That the words proposed to be left out stand part of the paragraph.

Committee divided.

Aye.  
Mr. Law.

Noes.  
Mr. Mahony,  
Mr. Wilks.

Words omitted.

Paragraph, as amended, *agreed to*.

Paragraph 2 read.

Question put,—That the paragraph as read stand paragraph 2 of the Report.

Committee divided.

Ayes.  
Mr. Law,  
Mr. Wilks.

No.  
Mr. Mahony.

And so it was resolved in the affirmative.

Paragraph, as read, *agreed to*.

The Chairman at this stage entered the room and took the Chair.

Paragraph 3 read and *agreed to*.

Paragraph 4 read, amended, and *agreed to*.

Paragraph 5 read.

Mr. Mahony moved the insertion of the words "do not" after "Committee" in line 1.

Question put,—That words proposed to be inserted be so inserted.

Committee divided.

Aye.  
Mr. Mahony.

Noes.  
Mr. Wilks,  
Mr. Law,  
Mr. O'Sullivan.

Proposed insertion of words negatived.

Mr. Mahony moved the omission of all the words after the word "The" in line 2 down to the word "great" in line 6.

Question put,—That the words proposed to be left out stand part of the paragraph.

Committee divided.

Ayes.  
Mr. Law,  
Mr. O'Sullivan,  
Mr. Wilks.

No.  
Mr. Mahony.

Words stand.

And certain amendments having been made,—

Paragraph, as amended, *agreed to*.

Paragraph 6 read.

And certain amendments having been made,—

Mr. Mahony moved the omission in line 6 "In Chicago, Glasgow, Liverpool, Paris."

Question put,—That the words proposed to be left out stand part of the paragraph.

Committee divided.

Ayes.  
Mr. Law,  
Mr. O'Sullivan,  
Mr. Wilks.

No.  
Mr. Mahony.

Words stand.

And certain other amendments having been made,—

Paragraph, as amended, *agreed to*.

Paragraph 7 read, amended, and *agreed to*.

Paragraph 8 read and *agreed to*.

Paragraph 9 read.

Question put,—That the paragraph as read stand paragraph 9 of the Report.  
Committee divided.

Aye.	Nocs.
Mr. Law.	Mr. Mahony, Mr. O'Sullivan, Mr. Wilks.

Negatived.

Mr. O'Sullivan moved,—“That the Chairman report to the House.”

Question put.

Committee divided.

Ayes.	No.
Mr. Law, Mr. O'Sullivan, Mr. Wilks.	Mr. Mahony.

And so it was resolved in the affirmative.

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1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

MINUTES OF EVIDENCE

TAKEN BEFORE

THE SELECT COMMITTEE

ON

THE ABATTOIRS.

TUESDAY, 18 AUGUST, 1896.

Present:—

MR. BAVISTER,		MR. LAW,
MR. HAWTHORNE,		MR. WILKS.
J. S. HAWTHORNE, ESQ., IN THE CHAIR.		

Henry Brisbane Swan called in, sworn, and examined:—

1. *Chairman.*] You have been Mayor of Balmain? Yes.
2. You are in a large way of business close to the Abattoirs? Yes, the timber business.
3. Were you at one time connected with Glebe Island? Yes; I was there five or five and a half years.
4. What position did you occupy? Superintendent over the workmen in the desiccating portion of the works.
5. What years were you engaged there? From 1874 to 1879.
6. You have not been in any way occupied there since? No.
7. But your business being so close—your premises being on the Abattoir Road—brings you into close contact with all the doings at the Abattoirs? Yes, very close.
8. Do you think that the past management of the Island has been satisfactory? The management up to 1879 was very unsatisfactory, but since then there have been vast improvements.
9. What have been the improvements in the Abattoirs generally, so far as you are aware, which have been effected at the Island since 1879? The management has been very satisfactory, seeing what they have to put up with. I think the management has been excellent, but the buildings are unsatisfactory.
10. What difference is there between the management of late years and what it was when you consider that the Abattoirs were unsatisfactorily managed? There have been different kinds of improvements. They did not seem to have sufficient influence over the butchers or the men. There also seemed to be a great deal of political influence—the men used to get the influence of Members of Parliament to go against the officials and so forth.
11. That is in the days gone by? Previous to 1879 I am talking of.
12. Did you know the late superintendent at the Island, Mr. Jager? Yes.
13. Who was the manager in your time? Mr. Oatley.
14. Mr. Jager has managed since then? He succeeded Mr. Oatley.
15. Were any complaints made about the management during Mr. Jager's time? I never heard of any. Mr. Jager seemed to manage very satisfactorily.
16. What about the present manager? The present manager seems to be very satisfactory.
17. Do you find the Abattoirs at all objectionable to you, viewed either from a business or a residential standpoint? I could not say there is much nuisance there now. Of course a person coming there fresh from the country would, perhaps, call it a nuisance when I would not notice it, being so accustomed to it.

H. B. Swan.  
18 Aug., 1896.

- H. B. Swan.  
18 Aug., 1896.
18. Do you find that any objectionable smells come from the Island? I cannot say that there are any objectionable smells now; everything seems to be very satisfactorily carried out.
  19. Have there ever been any objectionable smells? In summer time, when they may have left refuse blood or offal standing overnight, there has been a very bad smell, but there has not been lately.
  20. When you were Mayor, did you hear any people complain of anything objectionable at the Island? Not a word.
  21. They have not complained to you as an alderman either? No.
  22. The ward you represent runs right down to Glebe Island itself? Yes.
  23. And you are not aware of any objection being urged by the residents of the ward, or of the borough generally, against the continuance of the Abattoirs in their present position? No, I have not heard a complaint with reference to the management or smells at the Abattoirs, but I have heard complaints with reference to the cattle driving.
  24. What do you find the greatest nuisance, so far as you are concerned? The cattle driving.
  25. If the cattle-driving nuisance were got rid of, and the cattle were brought to the Island by some other means than driving them along the road, do you think that the public of Balmain would be quite satisfied for the Abattoirs to remain where they are? I think the great majority of the people of Balmain would be. Of course some people do object sometimes.
  26. What portion of Balmain does the objection come from principally? At present, I do not know of any objection from Balmain.
  27. Who are the people you spoke of as being dissatisfied? We hear an objection sometimes. People not interested will say the thing is a nuisance whether it is or not. The very name of the Abattoirs is sometimes sufficient to raise an objection on the part of some people; but take them over the place and they form a different opinion. When I was there, I showed them over the place, and they went away with a different opinion as regards the Abattoirs being a nuisance. But the present buildings are certainly not suitable.
  28. What would you suggest in the way of improvement to the Abattoirs to make them altogether unobjectionable;—do you think that the closing up of the present roadway and the formation of a new roadway round, say, near the edge of the water, as was suggested some time ago at a public meeting, would have the effect of removing all cause of complaint from people who have to travel by road from Balmain and Sydney? I do not think that that expense need be incurred. There is a very steep grade on both sides—you have to ascend to get on to the Island, and to descend to get off it—and if that was cut down and bridged over, the traffic would go along under the bridgeway, and there would be a level road, and the people would not know that there was an abattoirs on either side. That is a cheap way, and it would ease the traffic too.
  29. Your opinion is that if the roadway were cut down on both sides of Glebe Island and bridged across what is now looked upon as being objectionable—men passing from one side of the road to the other covered with blood—would be removed? Yes.
  30. You think that that would be as good a way of getting over the difficulty as forming a roadway all round the Island? Certainly; because people would not see anything at all. Lowering the level would also be a great improvement towards getting a direct tram from the city.
  31. Have you seen them killing meat there lately? Yes; last week, I think.
  32. Have you seen slaughter-houses in any of the other colonies? I have seen them in Melbourne and also in Chicago.
  33. Did you visit the abattoirs at Chicago? Yes, eighteen or nineteen years ago.
  34. Have you been to any of the other colonies in recent years? Two years ago I was in Melbourne.
  35. Did you have a look at the abattoirs there? Yes. The engineer of Melbourne showed me through the abattoirs and desiccating works.
  36. Where are the abattoirs there situated;—close to the city? Near the racecourse, at Flemington, I think.
  37. How far from the centre of the city? About a mile.
  38. They are quite as close to the city as the abattoirs at Glebe Island are? Not quite, I think. Balmain may be said to be part of the city.
  39. In your opinion, are they as favourably situated as our abattoirs? No. I do not think there is a better site in the world for abattoirs than Glebe Island.
  40. They have no water close to the abattoirs at Flemington? Only a stream or creek—a branch of the Yarra.
  41. Did you notice any objectionable smells there? No.
  42. You found the abattoirs at Flemington well conducted? Yes. Of course the buildings are a great improvement on ours. Ours are old-fashioned.
  43. What style of buildings are their's? Their's are two-story buildings, and everything falls down.
  44. The cattle are lifted up above? Yes. As near as I can recollect, all the blood and refuse fall from the second floor to the basement. The level of the slaughter-houses is 6 or 7 feet above the roadway, and the offal, I think, falls into trucks.
  45. You think that our Abattoirs are quite equal to the abattoirs near Melbourne? Not the buildings. Our site is superior, but our buildings are not. They are a failure, and want sweeping away, and new buildings erected in their place. But I say that there is no better site than that of our present Abattoirs.
  46. As a man engaged in the building trade, do you think that it is not possible to improve our Abattoirs by a slight expenditure of money in such a way as would make them up-to-date abattoirs—something in keeping with those near Melbourne? Not the present buildings. They are not suitable.
  47. Do you think it would be necessary to pull down these massive slaughter-houses? Pull them down and rebuild them in a modern style.
  48. What would you consider something like a modern style? Something after the style of the Melbourne Abattoirs—have a sort of basement underneath and let everything fall down to it and be taken away. The Glebe Island Abattoirs are all cramped for want of room.
  49. So it is your opinion that if new abattoirs were built on the present site at Glebe Island, and were conducted on similar lines to those prevailing at the slaughter-houses near Melbourne, there would be no need for shifting the Abattoirs, and the public surrounding the Abattoirs would be perfectly satisfied to allow the Abattoirs to remain where they are? The Abattoirs could be so conducted as to be no nuisance to anybody.

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50. Your property is, I think, within a quarter of a mile of the Abattoirs? Within 500 yards.
51. You have a considerable amount of property there? Yes; round about there.
52. And as a property-owner you have no desire whatever to see the Abattoirs removed from their present site? As far as the Abattoirs are concerned, they are of no benefit to me. It would, perhaps, enhance the value of property if they were removed. But personally I find no nuisance from the Abattoirs, and I get no benefit from their being there either. I am speaking conscientiously and saying what I think of them.
53. Is it your opinion that if the Abattoirs were removed from where they are now your property would be increased in value? I think so. I think there can be no two opinions about that.
54. But from a sanitary standpoint you have nothing to urge against the continuance of the Abattoirs where they are? From a sanitary point of view, you could never get a better place for the Abattoirs.
55. What is the general opinion of your council in regard to the matter;—do the aldermen, generally speaking, look upon the continuance of the Abattoirs there as unobjectionable? I think so. There may be an exception, but I think that a majority of the aldermen are in favour of the Abattoirs continuing where they are.
56. *Mr. Wilks.*] You stated that you had charge, principally, of the desiccating plant? Yes.
57. What is your opinion of the present desiccating plant? The present desiccating plant, I think, is worn out. It wants replacing with modern machinery.
58. You practically consider that the great weakness of the Abattoirs is the want of scientific appliances? Yes; the great weakness of the Abattoirs has always been because of patchwork. It has been added to and added to until it is very costly now to work it.
59. In regard to your knowledge of the detection of disease, such as tuberculosis and pleuro-pneumonia, do you think that that is effectively carried out? Yes. The management is very strict.
60. Then the objections to the Abattoirs are purely sentimental? I think so.
61. Just the fact of the Abattoirs being there? That is so.
62. Have you found any avowed public opposition to the continuance of the Abattoirs? Yes; there has been a meeting or two got up about it. Our council was opposed to the removal.
63. Supposing that the Island were used for meat-storage works, do you think that the opposition would cease? I think so. I do not see why it should not. Balmain is a working man's constituency and suburb; so long as you give him plenty of work he does not object.
64. Then am I to understand that the main objection to the removal of the Abattoirs is based on loss of work? That is one point.
65. You have admitted, as a property-owner in the district, that your property has not enhanced in value by the continuance of the Abattoirs at Glebe Island? Of course that is a common-sense view.
66. Some opinion has been expressed in favour of the Municipal Council having charge of the Abattoirs;—what is your opinion on that matter? I do not think they should.
67. You have no leaning towards the council taking charge? No; it is too big an undertaking for the council. I should certainly be opposed to the council having anything to do with it. The only question that cropped up in the Balmain Council was, that if the Government were going to hand the Abattoirs over to the City Council the Balmain Council might have been offered the first chance, and have been asked whether they could manage it or not.
68. With your experience of the Abattoirs, do you think it is better in the hands of the State? Undoubtedly. I am thoroughly in favour of its being in the hands of the State, in preference to its being in the hands of the council. I say nothing about private parties.
69. Would you favour the Abattoirs being in the hands of private individuals? Certainly; I think so.
70. Would you not be afraid that if the Abattoirs were in the hands of private individuals they would probably form a "ring"? I do not think so. In private enterprise there is so much competition.
71. You assume then that there would be more than one abattoirs? Yes. My opinion is, that the Government should lease them either Glebe Island, or some other suitable site—compel them to be in one centre and to build their own abattoirs under the inspection of the Board of Health, an architect drawing up plans for the abattoirs in a modern style. I should not like the Government to give up the supervision and inspection.
72. Have you visited the abattoirs at Duck River, under the control of the Graziers' Meat Export Company? I have been there.
73. Are they conducted any better than our own? I do not know. That is private enterprise.
74. Have they imported any better appliances than we have? Yes, they have more modern machinery. I had only a casual look at it. But that place is not an improvement on Glebe Island.
75. You spoke about the cattle-driving nuisance—you consider that that is the main objection of such suburbs as Drummoyne? Yes.
76. How would you suggest that that could be obviated? I suggested that a roadway be resumed direct to the Abattoirs for a cattle drive for the time being. Glebe Island will have to be utilised for some great work, and the railway will come there in the future—there is no question about that. This roadway could be used for a cattle-driving road for the time being, and a railway could be run along it afterwards.
77. The bringing of so many cattle, pigs, and sheep from places along the coast would not permit of the abattoirs being removed further inland, would it? A great many come from places along the coast, and, of course, sending them up the line would entail additional expense.
78. But it is argued that the driving of cattle has a detrimental effect on the cattle themselves;—what do you think of that? There are not two opinions about that. If you drive cattle a long distance the meat is not so good as meat killed on or near a station.
79. And cattle arriving by water from places along the coast would have to be driven? Only a mile or two, and that would not hurt any cattle. They are hurt only when you drive them 50 or 60, or perhaps 500 miles.
80. What is your opinion about retrucking, say at Flemington? I do not see much objection to the retrucking, for there is one straight run to Glebe Island. There are no stoppages, whereas in coming down the line to Flemington the trains stop at many places.
81. Would you suggest having saleyards in connection with the Glebe Island Abattoirs? That is the proper place for them.
82. What place would you use for that purpose? The reclaimed places at White Bay and Rozelle Bay.
83. Do you think that that area would be sufficient? Yes.
- 84.

- H. B. Swan. 84. You spoke about the necessity of rebuilding the Abattoirs;—have you any idea as to the probable cost of rebuilding the Abattoirs? I went into it at one time, and I think the calculation was that the expenditure of about £75,000 would make modern abattoirs right up to date, including desiccating plant and everything else requisite. You cannot base the estimate of cost on the past cost of the Abattoirs, because the money has been scandalously wasted.
- 18 Aug., 1896. 85. Through faulty management? If we wanted anything it was put in the hands of the Colonial Architect, and he would get out a costly design, and £1,000 or so would be wasted on costly plans before anything was done, and work that was put up one year was sometimes pulled down the next year.
86. *Chairman.*] The fault in the architectural management was probably at the time when Mr. Barnett was Colonial Architect? Yes.
87. You have not had any complaints to make in this respect since the change in the position of Colonial Architect took place? There has not been much improvement made since then.
88. Do you think that the fault you spoke of just now as regards putting up buildings one year and pulling them down the next was the fault of the Colonial Architect? Yes.
89. It was not attributable to any misdirection on the part of any of the officials at the Island? No. They could not get their ideas carried out. The Colonial Architect had his views carried out, and they complained very bitterly.
90. *Mr. Wilks.*] What seemed to strike you about the Melbourne Abattoirs as most to be recommended was the catching of the offal in a vessel and the carrying of it right away? Yes. The men all worked on one floor, and everything went from that.
91. Something similar to what is done in Chicago? They kill the carcasses on one floor, and they are dropped to the next and dressed there, and then are finished in another compartment.
92. The system we have here of killing all over the place is a bad one? Yes.
93. And the flushing with water does not destroy any dangerous germs that there may be? I cannot say that there are any dangerous germs, because if they see any sign of disease in the cattle they are not allowed to kill them.
94. I mean the germs that come from the offal—flushing with water does not destroy but simply spreads them about? It is only when it lies there. But there is nothing allowed to remain there now overnight.
95. Have you noticed the water there much discoloured? It has been lately. I think that they have stopped the desiccating plant from working, and they cannot get to sea with their punts, for I have noticed during the last few weeks that the water has been very much discoloured and has become objectionable.
96. Have you heard people raise objections to the discoloured water and the affluvia from it? Many years ago; but during the last ten or fifteen years the water has been free from that.
97. *Mr. Law.*] You say that in your opinion Glebe Island is the best site in the world for abattoirs? Yes, it is.
98. Originally it was an island with water running right round it? Yes.
99. I believe that you are the nearest resident to the Abattoirs? Yes.
100. And if there were any persons who would know that there was a nuisance there your family would be the family who would know it? Yes. When I was at the Abattoirs it was considered a very healthy place. I have known ladies, and men also, to come there to get the fresh blood to drink, to cure certain complaints, and I have known many cures effected at the Abattoirs.
101. You say that one fault in connection with the Abattoirs is that they are cramped for want of room? Yes, that is it.
102. I believe that the Abattoirs themselves—that is, where the work is carried on—occupy only an area of 8 acres? I do not think they occupy that. They may, including the sheep-pens and the paddock.
103. And on the other side of the road there are 28 acres, or nearly four times as much? Three times as much, anyhow.
104. At all events, there is ample room there to carry on a business five times as large as there is now? Yes.
105. You say that the buildings at Glebe Island are old, dilapidated, and altogether out of date? Yes.
106. In regard to the desiccating works, I believe they have already stopped working? I think they must have, from the way the bay is getting discoloured now.
107. Are you in a position to say whether these desiccating works did or did not pay? I could not say. But the great thing was that they did away with the nuisance previously there.
108. Can you tell me whether the desiccating works dealt with the blood alone, or with the offal and the blood? I think they dealt with both.
109. In regard to public meetings, or any agitation against the removal of the Abattoirs, is it or is it not a fact that large public meetings were held in the vicinity of the Abattoirs, and also at the Town Hall? There were meetings at the Town Hall, and I think also a meeting near St. Thomas's, to protest against the removal of the Abattoirs.
110. *Mr. Wilks.*] But they were not very largely attended, were they? I could not say.
111. *Mr. Law.*] Do you think that the system of inspection at Glebe Island at present could be improved upon? I do not think so; the supervision there is very strict.
112. Do you not think that the inspection at Glebe Island, everything being concentrated there, would of necessity entail much less expense than would be caused by having the abattoirs situated in different parts of the Colony? Undoubtedly.
113. *Mr. Bavister.*] Is it your opinion that the present objections are made in consequence of various personal interests, and not on the grounds of danger to the public health? I could not say; I have no interest in the Abattoirs.
114. I did not ask you about your interest, but whether your opinion is that the objection which at present is being voiced is in consequence of the interests of the individuals personally being affected, and not because they believe that the public health is liable to suffer? I know that the Annandale people said a lot of absurd things in reference to the Abattoirs.
115. You said that the council had an objection to the removal of the Abattoirs because that would tend to reduce employment, and, I suppose, to reduce their rates? I daresay that is one thing. Glebe Island employs a great number of men. I know one ratepayer who has eleven sons, three of them being butchers, whilst the others, who are engaged in various trades—such as engineers and boiler-makers—are interested in Glebe Island because their brothers work there, and they have property round about there also.

116. You replied partially to a question asked by Mr. Law as to how the inspection would be effected if, instead of the slaughtering being done at Glebe Island, it were distributed in different country centres;—do you think that as efficient an inspection could be obtained at the same cost? No; that is impossible. H. B. Swan.  
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117. You are of opinion that whatever objection does legitimately exist against the Abattoirs being retained at Glebe Island would disappear if the works were reconstructed according to the latest scientific ideas? Yes.
118. *Chairman.*] You said just now that if the Abattoirs were removed it would increase the value of your property? I assume that it would, because in places like Woollahra and elsewhere where there are no abattoirs the land is much dearer.
119. Your opinion is, that if the Abattoirs were removed you could look forward to an advance in the value of your property, both as selling property and as letting property? I do not know that it would make much difference.
120. *Mr. Bavister.*] During your visit to America, did you see any better method of transporting cattle by water than exists here? The cattle were all brought by railway.
121. Then you saw no method there of transporting them by water? No.
122. As a matter of fact, you and your Council have given great consideration to this question;—has there not been some system mooted by which cattle could be brought from the sale-yards in punts, without having a railway constructed and without interfering with private lands? That could be done, but that would be a costly work.
123. It was considered and found to be costly? I have heard a rumour, but I look upon it as a costly matter.
124. Have you any idea what the railway would cost? No, I have not; but I think it would cost 6d. or 9d. a head more to bring the cattle by the railway—that is, from Homebush to Glebe Island.
125. You consider it would cost that much more than it would in bringing them by water? Yes.
126. *Chairman.*] What distance, roughly speaking, would you reckon it to be from Glebe Island to Petersham station, *via* White's Creek? From 3 to 3½ miles.
127. Do you think that would be the best route to connect with Glebe Island? No; I think it would be better for a railway to come as far as Callan Park, and then through a tunnel on to Glebe Island.
128. Striking the main line where? At Croydon I think would be better.
129. You are still speaking of the proposed route for the Long Nose Point railway? No; I do not know the route proposed for that railway. I think the cheapest way you could come would be through Ramsay's bush and then across a lot of Government land.
130. *Mr. Wilks.*] There is one interesting answer you gave—you spoke about the construction of a special roadway for the conveyance of cattle? Yes.
131. Am I to understand that you meant a roadway and not a railway? Yes; an independent roadway.
132. Would that go through much valuable property? If it came through a tunnel from Callan Park it would cost nothing except for the tunnel.
133. But I am talking of a roadway for the conveyance of cattle;—what route would you suggest? My suggestion is to come by Mrs. Simmons' property and then come right through underground, and then you would not need to resume any land, and there would be only the cost of tunnelling.
134. *Chairman.*] Would that not be rather an expensive tunnel;—would it not have to go through solid rock? Yes, certainly, through solid rock; but no resumption of land would be necessary.

Archibald McNeill called in, sworn, and examined:—

135. *Chairman*] You reside at the Glebe? Yes; at 176, Bridge Road, Glebe.
136. You are an alderman of the borough of the Glebe? Yes.
137. You are also a carcase butcher at Glebe Island? Yes.
138. You have been engaged in that way for some years? Yes.
139. You have been engaged in the butchering trade nearly all your life? All my life.
140. You have had daily experience of the way in which the Glebe Island Abattoirs are conducted? Yes; ever since they have been erected.
141. What is your opinion about the past as compared with the present management? Well, of course, the past management was not carried out so strictly as it has been for the last five or six years, although there was never any fault found with any of the inspectors during the previous years.
142. Has any fault been found of late years with the management? Of course, in regard to fault-finding, you will have that in every case; but I, as an individual, have no fault to find with any of the inspectors, and especially Mr. Shelley, who is at the head. We had Mr. Oatley for, I suppose, twenty-five years.
143. Who is at the head of the Island now? Mr. George Shelley.
144. Since his appointment as manager the work on the Island has progressed very smoothly? Very satisfactorily, I should say. He is a man who takes a great interest in it. He is very strict.
145. As a carcase butcher, you do not see anything in connection with the administration of the Island for which you could suggest any improvement? There could be no improvement whatever with the present Abattoirs. When they were built thirty-six years ago our population was much smaller than it is now, and there was not half the quantity of cattle, sheep, lambs, and calves killed in those days as there are now. Therefore, to make better provision for the trade, the present Abattoirs will have to be remodelled.
146. In what way would you suggest that they should be remodelled? There are altogether 36 acres on the Island. There are from 25 to 30 acres in White Bay which have been resumed by the Government and filled in. That is alongside the Island. There is any amount of land there. Of course the slaughter-houses ought to be on the opposite side to where they are now.
147. You think that if the present Abattoirs were pulled down and new ones were built on the opposite side of the road, they would be in their proper place? Undoubtedly, that is the place they ought to be in.
148. What is the reason for your thinking that it would be better if the Abattoirs were built on the opposite side? Because there is more space. On the present site the lane and the approaches are too narrow for the amount of work that is done there.

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- A. McNeill. 149. That is, the space between the slaughter-houses where the vehicular traffic has to come in, is far too narrow? Yes, fully half.
- 18 Aug., 1896. 150. It would require to be almost twice the width it is at the present time? Fully that.
151. What space is there between the two rows of slaughter-houses? From about 35 feet to 40 feet—not more.
152. I suppose that in getting in your carts, and taking them out again loaded with meat, you find that a great amount of confusion and inconvenience exists on account of the narrowness of space? Yes. The slaughter-houses on the west side are all for beef, and those on the east side of the street are all for mutton and pigs. When the waggons are backed in at each slaughter-house there is hardly space for any waggon to go up and down the centre without touching the horses heads, and you have to drive very carefully or you will come into collision with other waggons.
153. The only way you have of loading the beef on to the carts is by backing them to each slaughter-house? Yes, to the door-ways.
154. So the space is continually blocked up by the vehicles belonging to the carcase butchers who have leased premises there from the Government for the purpose of slaughtering cattle? Yes. Every year six beef and six mutton houses are sold. The other six houses are reserved by the Government for killing by the head. You pay 1s. 3d. a head for a bullock. Previous to this year, ever since the Abattoirs were established, the charge was 1s.
155. Are these houses always kept going? Yes, very busy; but this winter, No. 12 and No. 11 are doing scarcely anything—only just a few head.
156. What is the reason for that;—is it that the carcase butchers are shifting to private slaughter-houses, or that the trade has fallen off? The trade has fallen off. The carcase butchers formerly doing business on the island are still on it.
157. They are all remaining there? Yes.
158. What is your opinion about the island generally for killing purposes;—is it suitable or unsuitable generally as a site, leaving out the question of buildings? There is no better site that I know of in this Colony, or anywhere else.
159. Have you seen the slaughter-houses in the other Colonies? No; but I know from information given to me by people who have visited them.
160. What is the general opinion of other people who have visited the Abattoirs in other Colonies and in other parts of the world? They all say that our site is the best that they have ever seen; but they find fault with the slaughter-houses being so cramped for space.
161. So you are of opinion, that if the land on the other side of the roadway were levelled down, and the available space there were used as a site for the new Abattoirs, that would meet with the approval of the carcase butchers who trade there, and also the retail butchers of the city and suburbs, and also the general public? That is my opinion. There is no better site which could be chosen or got. It has deep-water frontage right round; it is convenient to the city and to the suburbs; the transit is easy and convenient. All the supplies required for the city and suburbs—that is to say, for a distance of from 6 to 7 miles away from the Abattoirs—could be obtained there conveniently. The quantity of stock killed there is something enormous, and if it had to be killed in the country districts, in the summer months, the city could not be properly supplied.
162. Why could not the city be properly supplied;—would the meat become unfit for food before it could reach the market? Yes; in the winter months, in the ordinary cars, without any ice at all, you could bring meat 400 or 500 miles; but in the summer time it is impossible. It has been tried times out of number and it has been an utter failure, even in refrigerating cars.
163. Is it a fact that meat is often brought into Sydney, by refrigerating cars, in a blown state? I have never seen any blown by blow-flies, but I have seen it green and bad, and unfit for human food.
164. Even when carried in the refrigerating cars? Yes; in the summer months.
165. And you think the evil would be intensified exceedingly if the present Abattoirs were shifted to another place outside Sydney? I do, undoubtedly.
166. Do you know of any other place round about Sydney which would be so suitable for the erection of Government Abattoirs as Glebe Island? None. I do not know of any site within 30 or 40 miles, or even beyond that distance. In the first place, Glebe Island is so situated that from one year's end to the other we never see a blow-fly on it.
167. That is a strange thing? It is a strange thing, but nevertheless it is true.
168. You never see a blow-fly on Glebe Island? No.
169. That is a fact that cannot be disputed? It cannot be disputed.
170. Have you visited any of the suburban or country abattoirs? Yes.
171. How do they compare in the matter of blow-flies and general conduct? Well, in regard to any of the country slaughter-houses, they are full of blow-flies; there is no question about that. In any place erected in the interior or the suburbs where there is a quantity of timber and bush about there is always any amount of blow-flies.
172. Would that apply to meat-works such as those at Rookwood? Undoubtedly, except the whole of the land round about were cleared and all the surroundings were asphalted or concreted, and the water were kept continually running.
173. Does asphaltting and concreting tend to remove blow-flies? It tends to do away with them, because it keeps the place cool.
174. Have you been outside the Colony? I have been to Melbourne several times.
175. Did you never visit the Abattoirs there? No.
176. Have you been to America or Great Britain? No.
177. As to the removal of cattle from the sale-yards to Glebe Island, do you think any better method than that which now prevails could be suggested? The only method would be to have a road for cattle driving alone.
178. What do you think about the construction of a railway, or the bringing of cattle round by a punt, say, from Homebush—which of the two systems would be the better? Neither of them is workable; because, in the first instance, re-trucking cattle at Flemington to bring them to Glebe Island would never do, because the cattle would be knocked about so much.
179. Would they not be as likely to be knocked about when being put into the trucks in the first instance, say,

say, at Dubbo, Bourke, or Gunnedah, or any of the inland towns, as in putting them into trucks again at Homebush? Double trucking is always double bruising. That is the way we reckon it. Say you truck cattle at Bourke, or anywhere 200, 300, 400, or 500 miles from Sydney, and they come to their journey's end before they are untrucked, and are retrucked again out of the sale-yards, the trucking must cause a great deal of trouble and annoyance to the cattle, and they would be bruised to pieces, and that would never do.

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180. Has it ever occurred to you that sale-yards might be erected on the reclaimed land surrounding Glebe Island? That is the only way of evading the trouble of driving.

181. Do you think that the space on the reclaimed land at White and Rozelle Bays would be sufficient for sale-yards, and suit all parties in the way of carrying on the Glebe Island meat trade? Quite sufficient.

182. You think that the best solution of the whole difficulty would be to have the sale-yards and the Abattoirs close together? There is no doubt about it. That would do away with all the trouble and annoyance with regard to the driving.

183. Then the suggestion to take the Abattoirs nearer to Homebush you think would be out of the frying-pan into the fire, so far as the Abattoirs are concerned? I think so. There would be a great difference in regard to the price of meat if the slaughter-houses were removed from Glebe Island; because if you go outside Glebe Island to kill the meat and bring it into what we might call a central depôt—that is to say, a Government or any other depôt that might be established in the city—that means from 6s. to 7s. extra on every bullock.

184. So the transference of the Abattoirs from the present site to one out in the suburbs would mean an increased price for the meat, which would have to be paid by the consumer? Yes; of course it would fall on the consumer.

185. *Mr. Wilks.*] I understand that you look with disfavour on any site outside that of the present Abattoirs? Certainly.

186. Is that because the conveyance of the meat in the refrigerators would result in its being landed in the city in an unhealthy state? I did not say that; but in the summer months it would, undoubtedly.

187. You think that the Graziers Meat Export Company, who have their abattoirs on Duck River, must be guided very much by that? Yes, of course they are. You mean McMasters and Co.?

188. You think that that influenced them in placing their abattoirs on Duck River, or you would imagine so from your experience? Yes; but they have only killed a few cattle as yet.

189. In regard to the desiccating plant, is it a weakness of the present works at Glebe Island? In my opinion the desiccating works have been the root of all the evil in regard to the expense of Glebe Island, because the machinery is not up to the mark, and there is a great amount of waste labour and expense in carrying that place on.

190. You consider that if there were up-to-date appliances, that would be all that is required? That is undoubtedly all that is required. With an outlay of from £4,000 to £5,000 you could have a new plant altogether.

191. As small as that? Yes; it would not cost any more.

192. So the expenditure of £4,000 or £5,000 would practically make the desiccating portion of the works all that is required? Yes.

193. Are you in favour of the Abattoirs being continued under State management? Yes, undoubtedly.

194. You would not recommend handing it over to the municipal authorities? Yes; I say either the municipal authorities or the Government.

195. Which for preference? For my part I should prefer the Government.

196. You would not entertain the idea of handing the Abattoirs over to private people? Not at all.

197. You have no private reason, such as the removal of your plant, which makes you oppose the removal of the Abattoirs further inland? None whatever. I have always been in favour of the Abattoirs being at Glebe Island. Last year more than 80,000 cattle, over 1,000,000 sheep, and 55,000 pigs were killed on Glebe Island, besides a large number of calves.

198. What is your opinion about the cry of some residents of Glebe Point that the Abattoirs being at Glebe Island was injurious to Glebe Point;—do you think there was anything in that? Nothing at all. I attended that meeting and opposed it myself and spoke against it. There is no nuisance whatever. Mr. Wells, who is in business in Hunter-street, has the last house on Glebe Point, right at the water's edge, and his sons, whom I have seen every day, have told me that they never noticed any smell or nuisance whatever.

199. *Chairman.*] And Mr. Wells built his house after the Abattoirs had been in existence many years? Yes, many years. Mr. W. A. Hutchinson, who was mayor of the Glebe, and an alderman for many years, has the second house, and he has never grumbled.

200. *Mr. Wilks.*] You find your occupation a healthy one? Yes; it is the healthiest occupation. It is on record that the tanners' and the butchers' are the healthiest businesses in the world.

201. *Mr. Law.*] There is about a quarter of Glebe Island at present utilised for carrying on the work of abattoirs? Not more than that.

202. Consequently, in your opinion, three-quarters of this most valuable land just outside the city is not being used? Yes; Glebe Island is suitable for all kinds of stock to be killed there and taken straight away into vessels for export. If there were chilling rooms on Glebe Island in connection with the Abattoirs, you could load vessels and they could go straight away.

203. Are you satisfied that the inspection of cattle on Glebe Island is thorough? Yes.

204. Do you think that if the killing of bullocks were distributed over different parts of the Colony the cost to the consumer would be greater? Undoubtedly it would.

205. And the probability is that the inspection would not be so strict? No, it would not. We have no proper inspection outside Glebe Island. There is none at Riverstone, nor at the Meat Preserving Company's at Rookwood, and all the suburban slaughter-houses? A policeman goes round and says, "How many cattle did you get to-day, and what are the brands," and that is what is done.

206. I think that you said that to a certain extent it was probably owing to the desiccating works that there is a large loss? Yes; there is a large loss.

207. Are you quite sure there is a large loss in connection with the desiccating works? I am not quite sure that there is a large loss, but there is a loss.

208. But is it not a fact that the removal of offal and other matter costs something like £25 a week all the same now that the desiccating works are done away with, and that this is some of the loss that was put

A. McNeill. put down to the Abattoirs? I believe that in connection with taking the offal to the sea, the cost of towage is from £20 to £25 a week, because they have to keep a certain number of men to look after the punts and the loading, and they have also to keep firemen just the same as if the desiccating house were at work, on account of the hot water required for pig killing.

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209. You are satisfied, then, that if all this obsolete machinery were done away with, and the most modern improvements were effected, the desiccating works dealing with offal and blood, and so forth, could be carried on without a loss to the country? I think so. We all know the depression that there has been for the last four or five years in regard to our orchard people and farmers, and there has not been the same demand for the manure. The Government used to get £9 a ton for that manure, but now, I suppose, they do not get £4 a ton for it.

210. But is that in consequence of "rings" being formed in tendering for it? Oh, no. The only men who bought the manure from the Government there at one time were men named Shepherd and Montefiore, Joseph, & Co., and I presume they tendered in the usual way.

211. *Mr. Bavister.*] You spoke of the Abattoirs being rebuilt on the opposite side of the road—would that ground be as high as that on which the present Abattoirs stand? It is higher. From the opposite side of the road to the desiccating-house there would be a fall of fully 20 feet, and there would be ample fall from any place on which new Abattoirs were built to the desiccating-house.

212. You spoke of the bruising of cattle in trucking—do they get more bruised in being placed in the trucks than they do after they are in the trucks by coming in contact with other cattle, or with the sides of the trucks, more especially when the brakes are applied to check the speed of the train? The bruising we complain of is in the trucking and retrucking. When the cattle are in the train, they are perfectly quiet and do not get bruised. But while the train is being shunted they do get bruised, and if a bullock gets down, and there are nine, ten, or eleven bullocks in the truck, it is very difficult for him to get up unless he is a big strong bullock, and the consequence is that the others bruise him.

213. But, unless he gets down, all his bruises are obtained in getting into and out of the truck? Yes. The doorways are so small that they catch their hips in going in and getting out.

214. You spoke of a road to be used only for driving cattle,—how many public roads would they have to cross? That is where the query comes in. We will say that from Glebe Island to the present sale-yards is about 8 miles. The only available space between the island and the present sale-yards is across Leichhardt and Five Dock, and a portion of Ashfield. But, in my opinion, there is no nuisance.

215. But how many public roads would that cattle-driving road have to cross—of course every street in a borough is a public road? Well, we may say 100, perhaps.

216. If that road be used only for cattle driving, would you propose to block the other roads? Not at all.

217. Put bridges over them? No. Where the height would be sufficient for a bridge or subway, that could be done; but unfortunately the greater portion of the distance is over level country. I do not propose blocking the streets at all. The only thing I suggested is that, as in the case of a railway, whenever that road crossed a street you should have gates.

218. Then you would propose to put gates at every crossing of a street unless at places where a bridge over or subway under could be constructed? Yes.

219. And at each of those gates would you place an attendant in charge? No; the men driving would open and shut the gates.

220. You would leave it for persons travelling on a public road to open and close the gates of the cattle-driving road only? Yes.

221. Does not that strike you as being rather ridiculous? How are you to do it otherwise, except you place a man in attendance?

222. In crossing roads through a borough there is more traffic of individuals during the greater portion of the day along a public street than there would be of cattle-drovers along the cattle-road? Undoubtedly, because all the inhabitants of the borough would be passing to and fro.

223. And having had your attention called to that, do you consider it practicable to construct such a road as you say for the purpose of driving cattle along? I do not indeed. I do not see how the Government could do it.

224. *Chairman.*] The only real solution of the difficulty, in your opinion, would be the construction of a line of railway to Glebe Island, and the establishment of sale-yards surrounding Glebe Island? That is the only way of doing away with the cattle driving.

225. Because the road you spoke of would be thoroughly impracticable? I think so. As regards having sale-yards at the Island, what about the accommodation of the cattle before they are sold, and killed—what about paddock accommodation? Some of our paddocks are 2 or 3 miles away from the Island.

226. You attend the sale-yards on Mondays and Thursdays? Yes.

227. How many cattle do you buy on Monday? For ordinary trade, say, I buy 100. Some of the largest carcass butchers buy 200 or 300; but that is a week's supply.

228. How long would the 100 you purchased on Monday last you? Until Saturday; or, if trade were good, we might get them off by Thursday.

229. How many bullocks do you take in daily to the Island? From twenty-five to thirty.

230. Where do you keep the others in the meantime? In a paddock round Dobroyd.

231. The difficulty in having sale-yards round about the island on reclaimed land would be in keeping the cattle there until the different carcass butchers were ready to have them killed on the Island? Yes; but that difficulty could be got over in this way: we are allowed to keep cattle on the island; we have fresh water laid on to every yard on the island—both to the killing-yards and the side yards.

232. If the island were cut down and levelled, would it not be possible to have store yards where the cattle could be fed artificially, instead of, as now, being put into paddocks too often without the slightest vestige of grass? Yes; and they would do better so long as they have room to lie down. They do not want much feed. A little lucerne will keep them three or four days.

233. That would probably mean that beasts would be kept in better condition up to the time of slaughtering than they are now? Of course it would, because all the fever heat would be gone out of them after they had rested two or three days on the premises before being killed.

234. And are we safe in inferring that if the sale-yards remained where they are now, the paddocks now existing between the Abattoirs and the sale-yards could be disposed of for building purposes. There is no doubt about that, because they are all centrally situated.

Mr.

John Blowes Collerson called in, sworn, and examined:—

235. *Chairman.*] Where do you reside? At Prosper-street, Balmain.  
 236. What is your occupation? Engineer.  
 237. Where are you employed? Nowhere now.  
 238. What has been the scene of your employment in the past? I was managing the desiccating works at Glebe Island.  
 239. How long have your services at Glebe Island been dispensed with? Since the 1st of last July.  
 240. Were you retrenched by the Public Service Board? No, I was not. The Board of Health closed the desiccating works.  
 241. Did they assign any reason for closing the desiccating works? The machinery was getting very bad, and they would have had to lay out an amount of money on it if they continued the work much longer.  
 242. How many years have you been employed there? Over seven years.

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Collerson.  
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THURSDAY, 20 AUGUST, 1896.

Present:—

MR. LAW, | MR. WILKS.

J. S. HAWTHORNE, ESQ., IN THE CHAIR.

John Blowes Collerson recalled and further examined:—

243. *Chairman.*] You were for many years engaged at the Glebe Island desiccating works? Yes.  
 244. You have been recently retrenched? Yes.  
 245. No fault was found with your administration? No.  
 246. You left simply because the desiccating works were abolished? Yes, that is so.  
 247. During the years that you were there, were the desiccating works considered to be making a profit, or were they creating a loss to the revenue? Directly they were creating a loss, but indirectly they were not.  
 248. What do you mean by indirectly? That the freight of the steamer to sea, hauling the punt, being taken into consideration, they were paying a great profit.  
 249. In what way did you receive the matter that was sent to you to be treated? It used to come down direct from the slaughter-houses.  
 250. How was it conveyed to where you were? By gravitation.  
 251. If I mistake not you were on the opposite side of the street to where the slaughter-houses are? Not exactly so. We were straight before the slaughter-houses, as it were.  
 252. On the same side? Yes; we were opposite Glebe Point.  
 253. The nearest part of the island to Glebe Point? Yes.  
 254. That is, on the extreme south side of the island? Yes.  
 255. And your desiccating-house was situated, I think, at the south side of the present Abattoirs? Yes.  
 256. Was there any marketable value attached to what you treated? Oh, yes; there always has been.  
 257. In what form? For manure. Seven years ago you could not get it under £9 a ton. Montefiore, Joseph, & Co. had a contract with the Government for it all, and they resold it.  
 258. How many tons did you usually turn out in a week? Ten tons.  
 259. Are you aware what price Montefiore, Joseph, & Co. paid to the Government for it? I think the price was £5, but I am not positive.  
 260. And they sold it at £9? They would not retail it under £9 a ton.  
 261. Was there a great demand for it? We always used to clear the shed.  
 262. Up to what date did that system continue? I think that Montefiore, Joseph, & Co. had the contract for about three years after I came there, and then it was let to Shepherd Brothers.  
 263. Have you always turned out the same quantity? I have always turned out about the same quantity—about 10 tons a week.  
 264. Up to the time you left? I was turning out more just before I left, from the fact of the offal being sent out to sea. That gave me a greater chance with blood.  
 265. Did you never treat the offal in any way? Yes; I used to treat the offal.  
 266. Were there no means of making that of marketable value, with the machinery that you had at your disposal, instead of sending it out in the punts, as they do now, to sea? Well, it was of less value than the blood—you may say 30s. per ton less value than the blood—as a manure.  
 267. What was the price recently paid for this manure? They have sold some by auction, and I think some of the offal fetched something like 7s. a ton.  
 268. And the other? I am not quite sure, but I think it fetched something like £1 14s. or £1 15s.  
 269. How do you account for the falling off in the price of the manure—has it depreciated in quality, or has the falling off in the price been owing simply to an alteration in the times? Well, I put down the alteration in the times as being the main thing, but the quality has not been so good for the last eighteen months, from the fact of the paunches being cut open and let down the same drain. Instead of taking it away, as formerly used to be done, and as is supposed to be done now, I believe, the paunch stuff would come down and mix with the blood, and it had to be worked in and desiccated with the blood.  
 270. What was the reason of the change in the way of conducting the blood and offal to you, as explained in your answer to a previous question? The machinery was getting very bad, and I asked Mr. Houghton, the consulting engineer, about it, and it appears that he could not get the necessary money.  
 271. Was he disinclined to recommend the Government to go in for superior machinery? Well, we could have kept on as I was going on, but the machinery might have given in. One or two machines might have given in, and then we would have had to repair them.  
 272. Are the machines obsolete in character, or are they up to date? They are not exactly up to date, but they are very good machines.  
 273. How old are they? I suppose that those machines would be fourteen or fifteen years old.  
 274. What is generally considered a fair estimate of the life of machinery for such purposes as that? You must understand that they have to have new agitators; I put new agitators in them every two years at least. It eats the inside of the agitators away very swiftly.

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275. Have you, during the time that you have been engaged by the Government, had an opportunity of visiting any of the other colonies and viewing their respective abattoirs? No, I have not.

276. You have really had no practical experience in connection with abattoirs other than those on Glebe Island? Not with other abattoirs; but I have had practical experience with meat-preserving works, where I used to desiccate.

277. Previous to your engagement by the Government, in what private meat-preserving works were you employed? They were on the Clarence River, and were owned by a London firm—Whitehead & Co.

278. Were you engaged in the Colony, or sent out? I was engaged in Queensland for them, and I came to this Colony.

279. And it was at those works that you first got your practical experience in desiccating? Yes—meats, as a rule; but I used to desiccate blood at the same time.

280. You eventually became an employee of the Government at Glebe Island? Yes.

281. How many years did you remain there? Seven years, up to last May.

282. Were any complaints made during those years as to your management, or were any faults found with you? None whatever.

283. You appeared to be giving entire satisfaction? Yes.

284. What is your opinion about the management of Glebe Island at the present time;—do you think that it is judiciously managed, or otherwise? I do not. I have seen it far better managed than it is at the present time.

285. Do you think the management at the present time is not what it ought to be? Not what it ought to be, or has been.

286. Whose fault is that—is it the fault of the present manager or of any of the officers who have been put on to assist him? I can only look upon it as being the fault of the inspector, Mr. Shelley.

287. Were you there under a previous inspector? We had a superintendent, and he was retrenched.

288. What was his name? Kenway.

289. Are you of opinion that the Island was under better management during Mr. Kenway's time than it has been since? Oh, yes.

290. In what way has the management altered since Mr. Shelley took charge? For one thing—from a sanitary point of view—cleanliness.

291. Are the Abattoirs not kept in as cleanly a condition now as they used to be? No, they are not.

292. Would that result from a reduction in the number of hands, or from indifference or carelessness on the part of the inspector of the Island? Well, it is not from a reduction in the number of hands, because there are more hands there now than there were then—that is, on the sanitary staff.

293. The Island is less cleanly, and is not so well managed, to your mind, as it used to be under the previous administration? That is, to my mind.

294. Have you had any quarrel or any unpleasantness with the present inspector? No.

295. There is nothing in the way of malice in the remarks you are making? No.

296. Simply your opinion as an employee of the Government, working with the present inspector for some years on the Island? Just so.

297. Do you think that if a first-class manager were placed in charge of the Island it would be made more profitable to the Government, and more convenient for the carcass butchers who use the Island, as well as the retail traders who purchase there? Yes; I think there could be improvement.

298. Have you any other fault to find with the administration besides want of cleanliness? Of course the want of cleanliness brought the blood manure down lower in percentage on account of the paunches being emptied into the drain.

299. Was that simply an indication of laziness of administration, or was it to save expense in other respects, that this cutting of the paunches was resorted to? I do not think it was laziness; I think it was done through not looking after the butchers. Of course the drain is much closer than the place outside to which the paunches would have to be dragged in order to be carted away.

300. So it really was from want of proper oversight on the part of the inspector and his officers in looking after the butchers when they were dealing with the offal and matter from the different animals slaughtered there? Just so.

301. Do you think that if the services of the late inspector, Mr. Kenway, had been retained, the value of the manure would have been maintained? I am positive that he would have kept up the value of the manure.

302. And that would have meant that the desiccating works, practically speaking, would have been made a paying concern? Yes.

303. So that you are of opinion that it is not so much an alteration in the times, as an alteration in the management of Glebe Island, which has had the effect of bringing down to such a large extent the price of the manure? I think that it is not the times altogether; but the times have something to do with it, of course.

304. Do you think that the present site at Glebe Island is a suitable one for Abattoirs, or could you suggest a better one? I think it is indisputable that Glebe Island is the best available site for Abattoirs, not only in this Colony, but also in any part of the world.

305. You do not think that a better site could be obtained in any part of the world for Abattoirs than Glebe Island? I do not think so good.

306. Do you think that the present slaughter-houses could be altered at a moderate expense in such a way as to bring them up to date, or would it be wiser to build new Abattoirs on the opposite side of the road? I think it would be advisable to build new Abattoirs, and have them built up to date. You cannot patch up any buildings with advantage.

307. You think the present buildings are thoroughly out of date? They are thoroughly out of date.

308. And that no matter how much money was spent in improving the present buildings, they would still be found to be altogether inconvenient for the carrying on of any large meat trade, such as is to be found in connection with the city of Sydney and its suburbs? Yes, I do.

309. Would it not be possible, with improved slaughter-houses, to utilise everything that comes from the beasts, and make it of marketable value, instead of carrying it out to sea? Everything, I think. You must understand that nothing went out to sea, except the flushings—that is, the rinsing down of the sewers and the reservoir—when I was at work there.

310. But now that they have dispensed with your services, and the desiccating works generally, are all the substances that you used to treat taken out to sea? That is more than I can say.

## SELECT COMMITTEE ON THE ABATTOIRS.

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311. What do you imagine is being done with them? From 7 o'clock in the morning until 6 o'clock in the evening I used to treat 140 tons of thin blood and water mixed together. Then there would be about 50 tons of thick stuff besides that to go out every day.
312. And how many hands did you employ besides yourself there, in connection with the desiccating works? Fifteen.\*
313. Sixteen\* in all? Yes.
314. The average expenses of which for wages were—how much? £34 18s. a week for wages alone.
315. Can you tell us any other expenses that were incurred—I suppose there was wear and tear of machinery? Yes; wear and tear of machinery, and, of course, coal.
316. What was your coal bill? Our consumption was about  $4\frac{1}{2}$  tons for the twenty-four hours.
317. How many tons a week would that make—in six days? Yes; you can reckon on six days for that, and the quantity would be about  $28\frac{1}{2}$  tons a week.
318. Any other expenses besides that? The lubricants and belts, and the like of that.
319. At what would you estimate the other expenses all told, roughly speaking? Say, £4 per week.
320. Have you any other information that you have noted down which you think would be useful to the Committee at the present time in regard to the conducting of the desiccating works? I have noted down the punt.
321. Of course, the expense of the punt would have to be added to the expense of conducting the desiccating works? Yes.†
322. What would be the cost of keeping the punt going per week? £25 9s. 6d.
323. Are there any other expenses—wear and tear of the punt, I suppose? Yes; wear and tear of the punt.
324. How many trips a day did those in charge of the punt make? I cannot say how many they made.
325. How many were they supposed to make? Well, we used to stop for an overhaul about a fortnight each year, and it used to take me eight punts a week; that was two on a Monday and two on a Friday, and one punt on every other day.
326. Have you been to any other slaughtering-houses in this Colony? I have been to Riverstone and Auburn.
327. How do you think they are conducted as compared with Glebe Island? They are not conducted in a way anything approaching Glebe Island.
328. Not anything like equal to that? No.
329. Is the supervision at Riverstone and Auburn of such a character as to prevent the slaughtering of diseased cattle? No, I do not think it is. I do not think they could prevent it with the supervision which they have at those places.
330. You think it is much more easy for carcass butchers who have private slaughter-houses, such as those you have referred to at Riverstone and Auburn, to buy diseased cattle and slaughter them, and to send them on for sale to the public, than it would be at Glebe Island? Oh, yes, much easier.
331. The supervision at Glebe Island is particularly strict, is it not? Oh, yes.
332. Would it be at all possible under existing circumstances to get a diseased beast slaughtered for sale, and sent out of Glebe Island without its being noticed by the officials told off for that particular duty? I think it would be impossible without its being noticed; but there I must stop.
333. What do you mean by saying that you must stop there;—are we to understand by that that the carcass butchers frequently come to terms with the inspector so as to allow diseased cattle to be thrust upon the market in the form of diseased meat? I do not insinuate for a moment that they do it, but such could be done.
334. Did it ever strike you that such was done? No, not in the slightest—it never struck me.
335. You have never seen anything during your stay at the Island that would lead you to suspect that the officials stationed there would be liable to pass the beasts of any of the carcass butchers, either on account of pecuniary benefit, or from excess of friendship towards particular carcass butchers as compared with others? No; I have never seen anything to lead me to suppose that.
336. You have never seen anything approaching partiality displayed by the officials to any particular carcass butcher or carcass butchers at the Island as compared with others? Well, I think there are one or two carcass butchers that may have greater concessions than the others.
337. Would you have any objection to state the names of those carcass butchers? Well, I think that Mr. Henry Macnamara is one.
338. Do you think he gets concessions that are not generally granted to other butchers? I fancy I have seen it.
339. What form would you imagine the concessions take? For instance, there are so many beef-houses on one side, and so many mutton-houses on the other; and so many of those beef-houses are sold by public auction per year, whilst the others are open for anyone to go and kill in them.
340. So that any person buying half a dozen cattle at Homebush can, by paying a certain amount per head, have his cattle killed by himself or his servants at these particular houses on the Island? Just so. Well, I have seen one of these same houses turned into a place to kill calves in, although there are other houses purposely for calves.
341. And would it always be the case that the calves so killed in these particular houses belonged to Mr. Macnamara? Yes.
342. The same privilege would not be granted to other carcass butchers? No, I never saw it.
343. Did you ever see anything in Mr. Macnamara's conduct towards the inspector that would lead you to think that he was receiving these acts of kindness for anything he was doing for the inspector, or for any member of his family? I could not say that.
344. Is it a fact that Mr. Shelley has a son working for Mr. Macnamara? I believe so; he had.
345. One of Mr. Shelley's sons was in the employ of Mr. Macnamara? Yes.
346. Did it strike you that the fact of his son working for Mr. Macnamara had the effect of getting for him more generous treatment than the other carcass butchers had, who had none of the inspector's family in their employ? I cannot say that; but it has always struck me that he gets greater concessions—by what means, of course, I do not know.
347. Was there an impression prevailing amongst the other carcass butchers that Mr. Macnamara was specially favoured? Yes.

348.

\* NOTE (on revision):—Thirteen men and myself—Fourteen. † Expenses of punt would have to be deducted, instead of added.

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348. Are the carcass butchers supposed always to kill during the day-time? The time differs in the summer months, as compared with the winter months.
349. What about the winter months? In the winter months the time is from 7 o'clock in the morning until 6 o'clock at night. On Friday, I think, there is an hour or two extra allowed at night, and an hour or two in the morning; and calf and pig butchers have a concession—I think it is on Friday night that they can kill pretty well all night.
350. What are the hours in summer? In the summer the hours are from 6 to 7 o'clock, I think.
351. And a few extra hours on Friday night? Yes.
352. Is Mr. Macnamara allowed to kill for longer hours at night than any of the other carcass butchers? He has been. He has been allowed to kill freezers for exportation pretty well all night.
353. And he is the only carcass butcher permitted to do this? No; I cannot say he was the only carcass butcher permitted to do that. I think that another was killing in the same way.
354. Would it be possible, during these night-killing operations, for diseased cattle to be put through without any of the officers knowing? There was always an officer on duty when they were killing.
355. Whenever they are killing there is an officer inspecting all that is being killed? Yes.
356. So that no beast could be killed without its being inspected by an officer representing the Government? Just so.
357. So that although Mr. Macnamara might be allowed to kill at night when other carcass butchers were not, we could not infer from that that it would give him an opportunity to push through cattle that would be condemned at any other hour? Oh, no.
358. *Mr. Wilks.*] In connection with the desiccating, is the liquid portion that flows into the harbour obnoxious? Oh, no.
359. Not at all? I have brought that away perfectly clear—as clear as water.
360. It is odorless? Yes.
361. You stated to Mr. Hawthorne that you had had no practical experience in slaughter-houses outside the Abattoirs? Just so.
362. Have you any theoretical knowledge? Yes, I think so.
363. Are you acquainted with the system used at Edinburgh? No, I am not.
364. Have you heard anything about that system being one of the best, if not the best in the world? I think it is considered that the best system in the world is the German system at Berlin.
365. In connection with the operations at the desiccating-house, do I understand that you treated the whole of the liquid? Yes.
366. Did you not find that with the extraordinary flushings that took place there, the amount of water was often more than would actually be required if there were a better system in vogue there? Yes; the smaller the quantity of cattle killed there, the more water I got down below. They have what they term a fall of four bullocks, as if they are working from hand to mouth, just as they get their orders, an order comes in for a bullock, and they slaughter that bullock, and there is the same quantity of water used for the washing of one bullock as there is for four.
367. Your machinery had to treat all that? Yes.
368. And that has been one of the main reasons for the expense of the plant, so far? Just so.
369. Supposing that you had a common receptacle for the blood and the offal, instead of slaughtering all over the place as they do now, and the flushings continuing, would that not minimise the cost to a great extent, so far as the desiccating portion of the works is concerned? Yes, they could throw the blood up by air to any distance. I tried some experiments, and I threw up the thick blood by steam 21 feet.
370. How many years were you in charge of that desiccating plant? Seven years up to last May.
371. During the course of the seven years you have been compelled to treat hundreds of tons of liquid matter which could have been avoided by having a better system? There is no doubt about that.
372. And that would have minimised the expense right through? It would have minimised the cost right through.
373. You consider that that is really the weak spot, so far as your plant there is concerned? Yes.
374. Did I understand you to say that Mr. Houghton, the head engineer, was not agreeable to enlarging the plant there? He was agreeable. But I did not ask for an enlarged plant, but for enough money to repair the plant I had there.
375. What expense would that probably have amounted to? There are six machines in all, and three machines that want repairing, and I suppose that the repairing of those three machines would have cost £120 or £150 for each. Two of them would have had to have a new inner shell. All those machines are jacketted. There are inner and outer shells, and the steam, of course, is between the two shells.
376. Have you any suggestion you would like to make to this Committee as a desiccator—the position you held there? No.
377. Have you any suggestions you would like to make as an engineer? It is very evident that if the blood was separated from the water in the slaughter-houses, and taken down below, there would be a great saving in every way.
378. The other information you gave Mr. Hawthorne was purely from observations made by you there? Yes.
379. Deductions you drew from personal observation? Yes.
380. In regard to inspection for the detection of tuberculosis or any other disease in cattle, have you found the inspectors rigid? Yes, pretty well up to the mark.
381. Did you find at any time that disputes occurred between the inspectors and the slaughtermen? Oh, yes. When there is a dispute of that kind—and it is of frequent occurrence—the veterinary surgeon, Mr. Stanley, is called in, and he decides it.
382. But his decision is not final, is it? Yes.
383. Have you not heard of cases where, after Mr. Stanley's decisions have been disputed, the matter has been referred to the Board of Health? I cannot say that I have.
384. You have never noticed a visit from the Board of Health after a dispute with the veterinary surgeon? Mr. Stanley is from the Board of Health.
385. I mean Professor Anderson Stuart being there at all? He has paid visits there, but I never heard of the visits being through that.
386. Are you a resident of Balmain? Yes.
387. Have you found any strong inclination or avowed disposition on the part of the public there to remove the Abattoirs? Quite the reverse.

388. What is the character of the objections that are mainly urged by anybody there to the Abattoirs? I have never heard any.
389. Never heard of a cattle-driving nuisance? I beg pardon; of course that is indisputable.
390. That is the only nuisance you could observe? Yes.
391. Have you any idea, as a resident of Balmain, how that could be obviated? I can only see one thing for it, and that is to lay down a railway, and to have a driving track alongside the railway. They could not retruck from the saleyards; but a 30-foot space would be any amount for a driving track.
392. And what would be the use of the railway, then, if you say they could not retruck from the saleyards? Well, they could have freezing works all round there. They could kill their meat and freeze it on the Island; and the ships could come alongside, and it could be put into the ships when they wanted.
393. When you called Glebe Island the finest site in the world, you were anticipating a large trade similar to that which you now speak of? Yes.
394. Not merely slaughtering for the city and suburbs? Just so.
395. You think Glebe Island could be made a good export depôt? Yes.
396. And you could have a freezing apparatus on the Island? Yes.
397. Would the island space be sufficient, or would you require to use the reclaimed ground? I do not think you would require to use that ground, if the stock came direct from the markets.
398. The ill-effect upon property there you put down as nil? Yes; I think that property would take a rise if the establishment there were on a larger scale.
399. But supposing it remained purely and simply as slaughter-houses, what effect would it have then? I do not think it would have any effect.
400. So far as the disagreeableness of odour is concerned, is that minimised, or is it increasing? There was no odour you could speak of at the time the desiccating works were in operation.
401. It is only while the desiccating works are not in operation that there is a disagreeable odour? Yes.
402. In reply to Mr. Hawthorne you said that there has been a want of cleanliness, and that although more hands were employed there was a want of cleanliness generally there now compared with what there was some few years ago under some other management? Yes.
403. Is that caused by laxity of the present administration? I do not know.
404. What is your opinion? I should say it would be.
405. It is not owing to an increased trade there? Oh, no.
406. Purely want of proper administration? Yes.
407. He has been lax in regard to his officers and seeing to the order, and so on, of the different departments? Yes.
408. Do you think that Mr. Houghton, the consulting engineer, would be of use to this Committee in giving evidence in regard to matters we have been speaking of? Yes, I do.
409. You consider him about the best expert in the city in the matter of desiccating machinery? I consider that he is one of the best in the city on desiccating machinery.
410. Did you ever pay a visit to the works of the Graziers' Meat Export Company at Duck River? No, I have not.
411. You are not acquainted with their system at all? No.
412. *Mr. Law.*] From an economical point of view, do you not think that the inspection, if it were carried out in different parts of the country, would not be half as good as it would be from having it at Glebe Island alone? It would be more expensive, of course.
413. And disease would be more liable to escape notice in the country districts? Yes.
414. Who are the chief purchasers of the manure made from blood? Chinamen. But if there were new appliances we might get the serum. That would fetch something like £30 or £40 a ton, if it could be saved.
415. *Mr. Wilks.*] The albumen is the most valuable now? Yes.
416. *Mr. Law.*] Only about one quarter of the Island is at present utilised? About that, I think.
417. Consequently there is plenty of room there to carry on a business four times the size of the one now carried on there? Yes.

J. B.  
Collerson.  
20 Aug., 1896.

William John Spencer sworn and examined:—

418. *Chairman.*] You are the editor of the *Australian Meat Trades Journal*? Yes.
419. I suppose your office is in the city? It is at No. 6, Spring-street.
420. Have you been long engaged in your present capacity? Since February last.
421. Previous to that did you have any connection at all with the meat trade of the city or suburbs, or Colony? None, except as a journalist in a general way.
422. Your experience of the meat trade has been confined principally, I suppose, to conducting a trade journal? Yes.
423. Have you had any experience at all of the management of Glebe Island? None at all.
424. Have you ever visited the Abattoirs? Not the Glebe Island Abattoirs.
425. Have you ever visited any of the private abattoirs of the Colony? No. I might explain to the Committee how I presume it is that I have been called as a witness. I was anxious to bring before the Committee the growth and importance of the country killed and chilled meat trade in connection with the meat supply of the city.
426. *Mr. Wilks.*] Have you any statistics bearing on that? I can give the Committee the names of the works at which the country meat-killing and chilling is carried on, and the quantity of sheep they are capable of dealing with, and the fact that in New York the meat trade has altogether drifted into this channel. They do not drive or truck cattle down to New York to kill, but the meat is killed and chilled at Chicago and Kansas City, and is brought down in refrigerating cars.
427. *Chairman.*] I presume that you have had practical experience in connection with the meat business in America? No; I have not had any practical experience of it, and, as a matter of fact, I told Mr. Bavister, with whom I communicated, that I had had no such practical experience; but I also brought under his notice the names of gentlemen who have had practical experience of it both in Australia and in the United States.
428. You have not visited the Abattoirs, and therefore cannot speak about their management in any way? I cannot.
429. Have you been brought into contact in any way at all with the abattoirs in any part of the world other than New South Wales? No.

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- W.J. Spencer. 430. Can you speak authoritatively as to whether the present abattoirs are badly built, or in a wrong situation, or whether the carcass butchers generally, or the graziers, look upon the Abattoirs as not being on the right spot, where they ought to be? I cannot speak on that point. There is, of course, the broad general consideration of the cruelty involved in trucking or driving the stock so great a distance down to Sydney, when they might be treated nearer their own pastures; but of the details I know nothing.
431. Your suggestion would also apply to the cattle that come by sea—that instead of bringing them down alive, it would be better to bring them to the city in chilled chambers on the steamers? I do not think there is much of a cattle trade by sea at present.
432. I suppose that you recognise the fact that an abattoir of some kind is a necessity close to a large city like Sydney? I should say so.
433. Do you think that the tendency of the present age is to kill cattle as near as possible to their pasturage? I think so, decidedly.
434. And you think that the disposition on the part of the carcass butchers is to prevent as much as possible the bringing of live cattle long distances for the purpose of killing? I would not say that. Of course, when you come to talk about carcass butchers, there are vested interests. They wish the present channels to remain open and increased if possible.
435. But you do not see in the near future any prospect of the abolition of such a place, say, as the saleyards at Homebush? I do not at all look forward to the abolition of those saleyards; but I do think that the merits of the country-killed meat are bound to make way. I have here a list of works which perhaps the Committee may know of.
436. If you have a list of all the private slaughter-houses in the country, we shall be glad to have it? There is first of all Aberdeen, with a killing capacity of 12,000 sheep a week. Then there is the Graziers' Meat Export Company, who are erecting large works at Sandown, Duck River, near Parramatta. They are just starting there. They have, in the country works at Nyngan, with a killing capacity of 3,000 sheep a week; Werris Creek, 6,000; Carrathool, 6,000; and Forbes, 6,000. Then there is the Pastoral Finance Association. Their main works are at Kirribilli Point, on the other side of the harbour. They have country works at Young, with a killing capacity of 6,000 sheep a week; Gunnedah, 6,000; and Narrandera, 4,800. I have not put down the capacity of their Kirribilli works, but it is very large. I do not know exactly what it is. The Kirribilli works are chiefly a receiving depot. Then there is the firm of J. H. Geddes, Birt, & Co., Ltd., Pitt-street. They are the lessees of the Government meat-markets. They have country works at Narrabri and Tenterfield. The killing capacity of the works at Narrabri is 6,000 sheep per week. I do not know the killing capacity of the Tenterfield works; but they are at work, sending down meat every week. In addition, there is the Bourke Meat-preserving Company, whose killing capacity I do not know. They are sending down meat regularly every week to the Sydney market. Then there is the Dubbo Meat-preserving Company, with a killing capacity of 6,000 sheep a week. Probably the killing capacity of the Bourke works is about the same as at Dubbo.
437. Are all these works engaged in killing for the Sydney market, or more for the export trade? They are principally engaged in the export trade, but many of them are engaged in killing for the Sydney market.
438. But they were started principally with the idea of being export companies? Certainly that was the idea in starting.
439. And they are dealing with the export trade? Yes.
440. So, up to the present they have not been brought into competition very much with the abattoirs in killing for the Sydney market? Not very much. But their trade with the Sydney market is growing. That is a feature of which I am sure you will be able to satisfy yourself by independent testimony.
441. *Mr. Wilks.*] You said you were the editor of the *Australian Meat Trade Journal*? Yes.
442. Under whose auspices would that be—the fat stock salesmen? No; the proprietor is Mr. A. W. Pearse.
443. With whom are you immediately brought into contact—the fat stock salesmen or the retailers? With the freezing companies.
444. Have you any literature bearing on slaughtering? I have not.
445. Have you ever seen any literature bearing on slaughtering? No.
446. Do you consider that the Graziers' Meat Export Company are highly competent to deal with this trade—well versed in the mode of slaughtering, and so on? I think so.
447. And their opinions or action could be taken as a good guide? I think so.
448. You stated to Mr. Hawthorne that you believed the tendency of the age was to kill in the country? Yes.
449. On account of certain things, such as the meat becoming inflamed by travelling? Yes.
450. Then, how do you reconcile the fact that this powerful company, who have the assistance of experts, have their slaughter-house so close to the city as Duck River? I am not prepared to say that that will be a slaughter-house. Probably it will be more of a receiving house, as are the works at Kirribilli Point.
451. But are you not aware that they are slaughtering there now? I am not aware of that.
452. You are not aware that they have made arrangements for slaughtering there? I believe that they intended to slaughter there; but while a certain amount of slaughtering will no doubt always have to be done near the city, that company have already fitted up four works in the country. Nyngan is at work; Forbes is not yet; Werris Creek is at work; I am not sure whether Carrathool is at work; but they have fitted up to kill in the country. Therefore, there is nothing to prevent their killing meat there and sending it to town if they found it convenient to do so.
453. But are you not aware that they intend to do meat-killing at Duck River? I think it is highly improbable; otherwise they would not have four country works to kill at. They have gone to great expense in fitting up those works in the country.
454. Have you never heard that meat killed and chilled in the country and placed on the city market is inferior? I have heard precisely the contrary; and so far as I have been able to get hold of any chilled meat it has been immensely superior to the meat sold by the butchers, which ordinarily comes from the Abattoirs. We look upon it as a chance to get hold of any chilled meat which comes down from the country.
455. So you have not heard anything detrimental at all to chilled meat? No.
456. *Mr. Law.*] Your opinion is that the killing business carried on in the country should be extended? Yes.

457. You have enumerated a large number of places at which 3,000, 4,000, 5,000, or 6,000 sheep can be killed, and consequently there must be a large number of such places spread over the Colony? Yes.

458. Do you not think that, with these numerous killing-works, diseased meat is not so likely to be detected as it would be if the slaughtering were all concentrated in a large place like the Abattoirs at Glebe Island? I should like to point out that those works in the country are large works, and are easily inspected. They are to take the place, I understand, not of any central works in the city, which have never yet been erected to do all the work for the city, but of the innumerable private slaughter-houses, and it is more easy to inspect a large meat-works than a number of small slaughter-houses.

459. But you have told us of a great many places where there are 3,000, 4,000, 5,000, or 6,000 sheep killed, and does it not stand to reason that with inspection in a great central works in Sydney, the expense would be far smaller? Of course that is self-evident; but it remains yet to be demonstrated whether it is possible to concentrate all the killing in one place.

460. You know nothing about the Abattoirs at Glebe Island? No.

461. *Chairman.*] I suppose the idea is, that the Abattoirs could be continued as they are and still to do an extensive trade, but that on account of the increasing export trade, it would be necessary even to increase the number of the large country killing-establishments such as you have mentioned, and have given a list of to the Committee? Yes. The country killing and chilling facilities will certainly increase, if not for the town trade, at least for the export trade. Great advantages are claimed for country-killed and chilled meat, and it seems to me that it might well be made available as far as possible for the metropolitan meat supply.

462. Has it ever struck you that the Glebe Island, in addition to killing for the city, might, perhaps, be extended to such an extent as to do a very much larger trade in killing meat for export? A large trade is already done for export.

463. Have you ever visited or passed by Glebe Island? I have been past it.

464. Do you know the extent of the Island itself? No, I do not.

465. *Mr. Wilks.*] In view of what you have stated, do you consider it prudent for the Government to spend any reasonable sum of money in enlarging the present Abattoirs at Glebe Island? I do not think I am competent to pass an opinion upon that.

466. You practically gave an opinion on that? What I wished to convey was, that I did not think it would be wise for the Government to enter on a large expenditure, in view of increasing trade at the Abattoirs when, in my opinion, the trade there is likely to diminish. I believe the country trade will be an increasing one, and the Abattoirs a diminishing one.

467. The question with you is not one of removal, but simply one of extension? That is it.

TUESDAY, 25 AUGUST, 1896.

Present:—

MR. BAVISTER,

MR. WILKS.

MR. LAW,

J. S. HAWTHORNE, Esq., IN THE CHAIR.

Henry William Austin sworn and examined:—

468. *Mr. Wilks.*] What are you by occupation? Carcass butcher.

469. How many years' experience have you had as a carcass butcher? Ten years' experience as a carcass butcher, but I have been twenty years connected with Glebe Island.

470. Where else has your experience been? In my youth I had a little experience in old Newgate market.

471. Have you had any experience at Islington? I know Islington market.

472. Do you know the system adopted there? I do not know the system adopted there at the present time.

473. Have you visited any of the abattoirs in the adjoining Colonies? No.

474. Have you had an opportunity of reading up on the matter? Yes; I have read up on the matter at different times, and studied a good deal the management of abattoirs, and the way they should be situated, and that sort of thing.

475. In regard to our own abattoirs, what defects, if any, do you consider exist? Our own abattoirs at the present time certainly want repairing. The site is second to none.

476. What is the nature of the repairs which you would suggest in connection with our abattoirs? The mutton slaughter-houses are old and out of date.

477. Is that the only defect you can see in the buildings? There should be more yarding room for stock.

478. How would you attempt to get over the difficulty of want of yarding room? There is plenty of room on Glebe Island, which only wants a little levelling off, and yards built at the back, and also shelter for the stock. At the present time we have no shelter for our stock there. I do not suppose it would be possible to find any other place in the world with such bad shelter for stock.

479. Some little time ago you went on a deputation to the Premier? Yes.

480. You then laid before him a plan? Yes.

481. Would you mind giving the Committee the benefit of your knowledge as then placed before the Premier? When the deputation waited on the Premier, I went about the driving of stock. At that time there was a great to-do about the driving-stock nuisance, which I myself and all the other butchers admit is a nuisance—that is, the driving of stock to the Abattoirs during the hours when the public are using the roads. What I say is that the driving of stock on the roads should be limited to the hours between 12 p.m. and 6 a.m.

482. That is on the ordinary roads we have now? Yes; it will overcome that difficulty, and that is the only one I see standing in the way.

483. You do not see any necessity for constructing a road expressly for that purpose? At that time I pointed out to the Premier where there could be a road—not the whole of the distance, but brought from the northern road running through Five Dock, and down from Ramsay's Bush, and through Leichhardt. There is a lot of unoccupied land, some part of it being Government land. I thought at that time that if the Government were going to do anything in the matter, that road, if set out, would be the means of overcoming all the nuisance. The stock would not go through the populous streets.

484.

W. J.  
Spencer.

20 Aug., 1896.

H. W.  
Austin.

25 Aug., 1896.

H. W.  
Austin.  
5 Aug., 1896.

484. Have you heard anything about a system of railway in connection with the Island? Yes; I pointed out to the Premier then that a system of railway could be brought forward, and the main line tapped, I think, at Stanmore—I think that was my suggestion—and running thence along by White's Creek. There is a large piece of Government land which they are filling in there at the present time which could be utilised for a railway station, and likewise stock-yards. It is a valuable piece of land, which I do not suppose will ever be wanted for building purposes; but it would be very valuable for a railway-yard, and at any time the railway could be taken to Glebe Island, because it is a certainty that we shall have to have a railway to Balmain before many years pass. If the Abattoirs remain at Glebe Island a railway will have to be carried there. There are thousands of sheep that come to Glebe Island which do not go through the sale-yards at Flemington, and sometimes cattle. Sometimes there are 1,000 sheep in one consignment.

485. In regard to sale-yards, what is your idea—remove them from Flemington to the reclaimed ground around Glebe Island? The removal of the sale-yards is a very big question, and one which I do not think would be entertained, because there too is much money sunk at Flemington.

486. Through the City Council? Yes.

487. Vested interests are too strong? Yes; and I do not think the removal of the sale-yards could be brought about.

488. What is your idea in regard to the retrucking of stock? It would not act at all.

489. Well, if you could not retruck, you would have to have sale-yards at Glebe Island? Unless the stock were driven to Glebe Island at night.

490. There would be no necessity for a railway then? You will find the time will come when we shall have to have a railway.

491. I meant under this system? Yes, under this system.

492. What is your opinion of the present management of Glebe Island? It is up to date—the management is good.

493. There is nothing faulty there? There is nothing faulty in the management. No doubt there have been large sums of money spent on Glebe Island which could have been spent in a better manner.

494. Do you consider that the management is about as good as we could obtain? Yes, I think it is as good as we could obtain, and I think the inspection is excellent.

495. Have you any knowledge of the places called the calf-yards being used for other purposes than they ought to be used for? Not that I am aware of.

496. No carcass butcher having an advantage over another? I do not think so. I never knew anything of that sort. I think everything is dealt with fairly. That is my experience.

497. The desiccating plant is a source of weakness, is it not? It is a source of weakness, and it has been a source of great expense, but I think that under the present system they can cope with it.

498. What is the present system? Punting out to sea.

499. You consider that is a better system than the desiccating? Yes, and less expensive.

500. I suppose you have no knowledge with regard to slaughtering in Chicago? I have not been there, and cannot say much about it; but I know by reading that the sale-yards and the slaughter-yards there adjoin each other.

501. You are not aware, too, that they have what I may call a common cesspit to receive the offal in—they do not slaughter all over the place, but convey the offal to one given spot? The same is done at Glebe Island—that is, in regard to the blood. What we call the offal—that is, the inside of the bullock—the guts, the liver, and that sort of things—is taken away to pig and poultry farms, &c.

502. Are you aware of any objections being lodged against the removal of the Abattoirs? Yes, I have a knowledge of that. I have objected to it myself, because I am sure we could never do without them. It would be one of the greatest mistakes that was ever made in connection with Sydney if the Abattoirs were taken away from Glebe Island.

503. You do not countenance at all the idea of bringing chilled meat into the Sydney market? Chilled meat is all very well. The chilled-meat business here will come about naturally, the same as it does in all other big towns in the world. Those people who wish to send chilled meat to the market will send it. The stock belongs to them, and they have a right to deal with it in the best way they can for themselves, whilst people who wish to send their cattle to market to be sold to the butchers will do the same.

504. You know of no obnoxious smells from the Island which people complain about? Not of late years. Years ago, when the fat-house was put on the Island, there certainly was a very objectionable smell, but of late years, since the swamp has been filled in, I think it has been done away with.

505. You consider that a good deal of the objectionable smell in the past was owing, possibly, to the swamps around there? Owing to the stuff being emptied into the harbour and lying on the mud, and sweltering with the hot sun on it.

506. You might give to the Committee your opinion in regard to the necessity for the Abattoirs being at Glebe Island on account of the coast trade in cattle, pigs, and so on? My experience is that at the present time our Abattoirs are situated in a very good place, more especially to cope with the trade of Sydney, and likewise the export trade. The time will come, and I am sure that if there was a railway to Glebe Island it would be the means of opening up a big export trade from that Island. People can erect places as they have done in the country, and kill their meat and send it to Darling Harbour; but if it is sent to Glebe Island and dealt with there it is dealt with much more cheaply.

507. Have you visited the Graziers' Meat Export Company's works at Duck River? Not since the present plant was erected there.

508. They virtually carry out the principle you are now proposing for Glebe Island? Yes.

509. What suggestion would you make to utilise Glebe Island for larger purposes than the present? What I would suggest is the levelling off of the northern and north-eastern portion of the Island, building a sea-wall round and using the debris from the hills to fill in behind the wall, and to build stock-yards on the Island. No doubt the time will come when stock will be exported from Glebe Island as it is now from Newcastle, from which town it is exported to Noumea, Fiji, and other places. If we had suitable yards at Glebe Island that trade would be brought there. But we have not suitable yards for shipping cattle. Then, in the next place, refrigerating-chambers could be built on the wharf, and meat run into them to wait there until put on board ship. There is good water round Glebe Island. Any ship could come and lay alongside and load right away from the chambers, not as is done now—carting it down to Kirribilli Point in punts.

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510. You consider that the possibilities of Glebe Island are unbounded for a trade of that character? Yes. Of course Glebe Island is a big place, and other trades could be carried on there. If Glebe Island were properly laid out, there is no doubt that big canning works would spring into existence around it. There is one there at the present time—the Globe Meat Works. They carry on a very large business, and take away a lot of stuff from Glebe Island.

511. They deal with the Island direct? Yes.

512. The opinion you are now expressing is purely from a public point of view and not merely based on your own business relations? Not at all. It matters little to me where they take the Abattoirs to. If they were to shift the Abattoirs, I should shift too. But if the Abattoirs were shifted to the country it would be the means of large companies springing into existence. In time those companies would combine together, and they would ring the Sydney meat market, the same as has been done in a great many other towns. I am sure of that. That is what some people are trying to bring about at the present time.

513. You believe that the tendency is to try and place the Abattoirs under private control? That is the tendency, I believe, which they have at the present time.

514. Instead of having one central abattoirs, which they talk about now, there would be several central abattoirs? Of course there would be. The greatest mistake the country could make would be to do away with the present Abattoirs. In summer-time four months of the year, it would be impossible to do without them. You can kill meat even there in the morning in summer, and if it is not broken up, it will stink in the evening, and butchers look for two deliveries of meat a day to their shops. At the time there was the row with the butchers there among ourselves, in the summer-time they killed meat up at Rookwood—both beef and mutton. The consequence was that when it came to the market it was bad; and the same thing would happen again. If they tried to kill the whole of the meat for the city, even supposing the Abattoirs were removed to Belmore—and I know there is much talk of their going there, and likewise of another site on the Wentworth Estate—I am sure it would never pay. It is all very fine for people who have not had any experience in the trade to talk about what they could and could not do, but it would not suit the public, and if the Abattoirs were removed from Glebe Island I am sure that in two years' time the public would rise up in arms about it.

515. You have heard some talk about removing the control of the Abattoirs from the State and placing them under municipal control;—what is your opinion of that? My opinion is that the City Corporation is the proper body to have the control of the Abattoirs in Sydney, and also of the meat trade generally in Sydney. The time must come when, whether they are under the control of the municipalities or under the control of the Government, there will have to be public abattoirs, I think, at Willoughby, and also in the district of St. George.

516. Sort of auxiliaries to Glebe Island? Yes; but if the authorities allow private slaughter-houses to exist, they will simply get diseased meat into the market, and sold to the people; whereas, if the abattoirs are under the control of the municipal councils or the Government, they will exercise supervision over the meat, and the public can look forward to having a sound article to eat.

517. What is your experience, during the twenty years, in regard to the inspection of meat at the Glebe Island Abattoirs—is it a rigid one? Well, during the first ten years that I was at the Abattoirs, I cannot say that the inspection of meat was what it should have been; but during the last ten years it has been pretty rigid.

518. *Mr. Law.*] When you were referring just now to some works carried on there, did you refer to Mr. Barnes' works? Yes.

519. What trade in particular is carried on at those works? The canning of meat of all descriptions. They carry on a large business there.

520. Is it a fact that they are going to put up new extensive works there? Yes; there is not only Mr. Barnes' factory.

521. It is going to be a very big concern? Yes.

522. Five storeys, or something like that, and covering a large area of ground? Yes.

523. I think I understood you to say that if the meat were killed in the country that would increase the cost to the consumers in Sydney? Yes, it would, considerably.

524. Can you explain to me why it would increase the cost to the consumers? It would increase it in this way: In the first place, stock sent to Glebe Island is dealt with more cheaply than it could be dealt with in the country; in the second place, if the trade were driven away to country slaughter-houses, that would be the means of large companies springing into existence, and it would only be a matter of time when they would form a ring and have their own prices; whilst, on the other hand, in buying their stock from the graziers they would grind the graziers down to the lowest possible price, so as to make big profits for themselves. The same thing is done in plenty of other places, and that is a thing we want to fight against.

525. You look at it in that light? Yes.

526. Do you not think, also, that the fact of there being a large number of abattoirs in the country would necessitate far greater inspection, and also the employment of a considerable number of inspectors? Yes. It would be almost impossible to inspect all the meat that would come into this market.

527. Whereas at one central place it would be under the supervision of one or two inspectors? At the present time, I think there are six inspectors at Glebe Island, and I assure you that all the stock that is killed there is inspected.

528. In regard to Glebe Island, do you know that the part utilised at present in connection with the Abattoirs is only one-fifth of the total area of the Island? Yes.

529. And, consequently, there is sufficient space there to build abattoirs which would meet the requirements of a population six or seven times the present number? Yes; but, as I said before, the time will arrive when it will be necessary to erect abattoirs in the Willoughby and St. George's districts. Any man who understands the geographical position of Sydney can form that idea, because it would never do to cart all our meat from Glebe Island (say) in fifty years' time, when, of course, the city will have extended very much more. But at the present time Glebe Island is suitable, and will for some years to come be suitable for the city and suburbs. Every morning orders come to Glebe Island for meat for Manly, Narrabeen, Dapto, and different suburbs on the North Shore, &c. There are times when we have to send meat even to Newcastle.

530. Do any cattle now come from Queensland to Glebe Island by sea? At the present time boats are bringing cattle to Glebe Island from the Macleay, and sometimes from the Clarence and the Richmond.

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Glebe Island is a suitable place for unshipping them. They are unshipped and can go right into the Abattoirs without being driven along the roads. But if the Abattoirs were taken away from Glebe Island those cattle would have to be driven from the ships to the sale-yards or slaughter-houses.

531. If a mob of cattle had to come from Grafton, what would be the difference in cost per head between bringing them by land and bringing them by water? I cannot say what the difference in the cost per head would be. But if cattle were driven overland from Grafton, by the time they arrived here their condition would be driven off them, and the cost would be greater, because if they come by the boat, they arrive here in good, sound condition.

532. Do you not think that it is a very essential point in the interests of Glebe Island that cattle should be brought to that Island direct by sea from Queensland and all the other colonies, inasmuch as you say that that would not interfere with the quality of the meat, whereas driving the cattle considerably deteriorates the quality? That is my opinion.

533. In regard to the desiccating works, I understood you to say that they were a serious source of expense? Yes.

534. Do you think that that is in any way attributable to the old antiquated machinery there now;—do you think that if the most modern improvements were effected there the desiccating works could be carried on profitably? Yes; I believe that if they had up-to-date machinery they could be worked more cheaply and more beneficially than they were before, because I always looked upon the machinery that was at Glebe Island before as machinery got up for eating coal, for I used to see them carting coal there every day, and I thought that there was a great mistake somewhere.

535. You are acquainted with all the carcass butchers? Yes.

536. What is your idea as to the prevailing opinion among the carcass butchers;—are they in favour of the retention of the Abattoirs in their present position? Most of them are. Of course they know the evil effect that the removal of the Abattoirs would have.

537. And as you supply a large number of the retail butchers, and know the majority of them, what is your opinion as to the trade generally? I was speaking this morning to one of the retail butchers—Mr. Henry Bartlett, of George-street—on the subject, and he said that it would be impossible to do without city abattoirs. I should like you, gentlemen, to obtain the opinion of some of the big butchers—say, Mr. Playfair and Mr. Bartlett, and also of Mr. Badgery (Pitt, Son, and Badgery), who is one of the agents for stock. I suppose that Mr. Badgery knows more about the trade than any other man in the country, both wholesale, retail, and graziers' business, and everything else.

538. Do you think that the removal of the Abattoirs from Glebe Island would enhance the value of property at Balmain? I would not like to say that.

539. Do you think that the fact of the Abattoirs being there depreciates it? No; I do not think it depreciates the value of property at all, because most of the people reside at that end of Balmain and Pyrmont.

540. The driving of cattle and sheep is, you think, about the only trouble there is in connection with the Abattoirs? About the only trouble I know of in connection with the Abattoirs is the driving of the stock. Of course there are a few people living on Glebe Point whom nothing would suit, except, I suppose, there were some nice villa sites on that part of Glebe Island where the desiccating house is.

541. *Mr. Wilks.*] Or a bowling-green or something else ornamental? Yes.

542. *Mr. Law.*] You mentioned that there was some talk of having abattoirs at Belmore and some other place, and you said that you did not think that either of those places was suitable. I suppose that the reason why it is not suitable is because the country there is flat? I do not say it is not suitable, but what I mean is that it would not suit the trade.

543. The Abattoirs at Glebe Island being 20 or 30 feet above the water-level there is consequently a good fall? Yes.

544. *Mr. Bavister.*] You have spoken of chilled meat, and I think you have also stated that you have known meat which was killed at Glebe Island to be unfit for food before night? Yes.

545. One of the previous witnesses stated that meat which came down from the country chilled was also in that state sometimes? Yes.

546. Is that common all the year round, or only in some particular season? You may say four months in the summer-time—December, January, February, and March.

547. I suppose that in your business it has been to your interest to watch the chilled meat that has come into the market? Yes; I have watched it.

548. Does the country killed and chilled meat now arrive in as good a condition for human consumption as that killed on Glebe Island? No, it does not. No man who knows anything about meat will take a piece of meat that has been in the chilling-room in preference to a piece of fresh-killed meat. For instance, take the Jews. They are the greatest authority on meat we have, or could get, and they will not eat a piece of meat that has been killed any time or hung. The fresher they get it the better they like it.

549. But there is a very widespread prejudice, especially among people who come from England, in favour of meat that has been killed for some time and hung? There may be among moneyed people, but the poorer classes do not care how long the meat has been killed so long as they can get it.

550. My impression was that it was the moneyed classes in England who insisted on having meat, especially mutton, hung a long time before they would eat it? Yes.

551. Do you think that with all the improvements that have been made in machinery in connection with the chilling of meat there may be still further improvements, and consequently that it may be possible to do without the Abattoirs in the city altogether? I do not care what machinery they introduce into the business, they can never do without the city Abattoirs.

552. I will put the matter in another way. Would it be possible to bring into Sydney meat killed at the country Abattoirs if the carcasses were broken up into smaller joints before being despatched? They would have to pack it. When you break up meat you have to hang it up in pieces in such a way that the air can get between; but they would have to pack it, and then it would become sour.

553. Would it not be possible to fit up the cars in such a way as to hang up the carcasses in large pieces instead of quarters? You could fit up the cars in that way, certainly.

554. Leaving out the question of cost, would it not be possible by such a system to supply Sydney with wholesome meat? No; the people would not have it.

555. I am not asking what the people would have; would it be possible to get the meat into Sydney in a wholesome condition, it being killed in the country, chilled, and broken up? It would be possible to get it in, but the trade would not take the meat.

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556. Have you any idea how many slaughter-houses have to be attended to by the six inspectors on Glebe Island? There are 12 chains—there are twelve pithing-pens.

557. Is only one slaughterman employed in each of those pithing-pens? No, a dozen.

558. Then there may be as many as 144 slaughtermen working at one time? Yes.

559. And all the meat that passes through their hands has to be inspected by six men? Yes.

560. And you assert that the inspection is well done? Yes; it is well done. I will tell you why. In one place they run in the bullocks and they knock them down. After the lapse of two or three minutes the carcass is turned on to its back, and the inspector is there as you draw the lungs out of the bullock, and he handles them and squeezes them through his hands to see if there are any lumps, ulcers, or anything else there. If there is he throws it on one side, and then, as the bullock is raised on to the balks, the broad-arrow is put on it. It is the property of the Government then. We generally knock down three bullocks together, and the inspector watches those three bullocks, and as soon as they are inspected he walks into another place, but before he gets out another man perhaps walks in, and so they keep going alternately from one place to another.

561. As a matter of fact, it is not possible for a bullock to be slaughtered and dressed without the inspector seeing it before the inside of it is removed from the carcass? It is not possible on Glebe Island.

562. Then, whatever bad meat gets into the Sydney market must come from somewhere else? It comes from the country; but it would not do for me to say too much on the subject.

563. I suppose it is a fact that some meat does occasionally get into Sydney which should not come here? Yes.

564. But you are convinced that it does not come from Glebe Island? I am convinced that the Glebe Island meat is thoroughly inspected.

565. Do those six inspectors have to inspect all the sheep that are slaughtered there as well as the bullocks? They work among the sheep and pigs and everything.

566. And is the inspection of the sheep and pigs as efficient as that of the bullocks? Yes.

567. You said you suggested to Mr. Reid, when on the deputation, a course that the road to Glebe Island might take;—have you any idea how many public roads that would cross? I do not think it would cross one public road. I had a plan, and Mr. Reid asked me to leave it with him, and I have not been able to get it since. Everything was dotted out upon it—the road that was to be proclaimed for the stock and the Government roads and everything.

568. The driving of cattle, you say, is admitted by all parties to be a nuisance? Yes.

569. Is it not also admitted to be a danger? Yes; in the daytime it is dangerous.

570. It is only a few days ago that a lady was injured by some bullocks? I heard something of that.

571. Is that a common occurrence? No; that is the first instance I have ever known of anybody being hurt. I believe that that came about through some cattle being taken from a boat at Glebe Island last Saturday evening.

572. In connection with the whole question of the abattoirs is, of course, the question of droving;—have you been able to form an opinion as to whether the roads and the footpaths of the municipalities through which the droving takes place are considerably damaged at different times, more especially when they are newly put down? No doubt there is a certain amount of damage to footpaths where stock are driven, because you cannot drive stock the same as you can drive horses.

573. Have you had an opportunity of forming an opinion as to which do the most damage to the roads and footpaths—the sheep or the bullocks? It all depends on the condition of the roads. In wet weather, I believe, the cattle, and in dry weather the sheep, do the most damage, because I believe the sheep work up the stones.

574. Has it come to your knowledge that considerable lengths of newly asphalted paths have had to be entirely relaid in consequence of that? Such may have been the case, but I have not known of it. I know the drovers try to keep the stock off such paths.

575. I believe it is the custom of some of the municipalities to issue rules regulating the driving of stock through certain streets? Yes.

576. Do you know if the drovers try to carry out those rules, or do they set them at defiance? I have not heard of such a thing.

577. You spoke of the retrucking of stock as being impracticable? Yes; it is not workable.

578. Why? There would be the additional knocking about of the cattle in retrucking them, and, in the second place, the cost of retrucking them and bringing them to the abattoirs would be too great.

579. Have you any idea what the cost of retrucking would come to per head? No.

580. Can you guess within 5s.? I could not say.

581. Do you think it would be equal to 5s. a head? I think it would.

582. As to bruising the cattle—are they bruised more in getting into and out of the trucks than they are by the shunting and the journey? Well, having careful men to truck and untruck them makes a lot of difference. At Flemington the men are pretty well educated up to untrucking cattle, but I believe that at country places the cattle are knocked about very much at times.

583. That answer appears to point out that you consider cattle can be trucked more easily, and with less expense, and with less damage to the cattle, at Flemington than anywhere else, in consequence of the experience of the men? The experience of the men. Of course, I do not say it would lessen the cost.

584. It could be done better, with less injury to the stock, because the men are educated up to their work, and have had more experience? Yes.

585. Then it must be cheaper if it does less damage to the stock? Yes.

586. Having said that, do you still think it is impracticable to retruck? I do. I am sure it is unworkable.

587. *Mr. Wilks.*] In regard to the product of the desiccating plant, do you think it is of any commercial value to speak of? It is to a certain extent. Of course it is not so valuable now as it was some years ago, because everything has gone down in the market, more especially manures.

588. It is not simply that there is not a general use of manures, but the price has gone down in common with that of other commodities? Yes.

589. Do you know anything about the albumen that is obtained? I do not know anything about that.

590. Are you aware that the immense quantities of water which they treated with the plant led to the extra expense of the desiccating plant? They used to use very large quantities of water with it, I know.

591. And I suppose that that led to a great deal of the extra expense of working the plant? Yes.

592. How could that be obviated, if it could be obviated at all? I am sure I could not say. I have had no experience in that direction.

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593. Well, with your experience of cleansing, do you think there is an unusual quantity of water used? No, I do not think so. I know that if you let the water run to waste the inspectors are very soon down upon you, and take your name, and you are summoned.
594. It was never pointed out to you that the extra cost was because the desiccating plant had to do so much extra work because of the large quantity of water? No.
595. *Mr. Bavister.*] You spoke of the Belmore site not being suitable;—is that because while the water is close handy it is comparatively stagnant water—not tidal water? I spoke of the Belmore site not being suitable, but it is suitable in this way—if you had not a better place. But Glebe Island, as I said before, is second to none.
596. Is Glebe Island a better place in consequence of its being surrounded by tidal waters? Yes. There is one thing about the driving of stock which I should like to point out. You should license all drovers in charge of stock, and then, if anything wrong took place, you would have something to fall back upon, and it would make them responsible.
597. *Chairman.*] A little while ago you stated, in reply to one of the Committee, that you knew of diseased meat coming into the Sydney market, but not from Glebe Island;—can you state positively where this meat comes from? People who have read the papers from time to time might have seen.
598. You are not in a position to say positively? I am not in a position to say positively.
599. But you are of opinion that diseased meat does come into the Sydney market from abattoirs outside Glebe Island? Well, I should like to know what becomes of all the diseased bullocks. Before there was such a rigid inspection carried on at Glebe Island, we used to get a lot of cattle sent to Flemington suffering from cancer, tuberculosis, and actinomycosis, and different other diseases, and that stock used to come to Glebe Island. But since there has been proper inspection there the graziers dare not send diseased bullocks there, and I should like to know where they go to now. They go somewhere.
600. You are of opinion that diseased cattle still find their way into the sale-yards at Homebush, but they never put in an appearance at Glebe Island? I do not say they are sent to Homebush.
601. But is it a general impression amongst the carcass butchers at Glebe Island that diseased cattle are still being sent on to the Sydney market through being killed at other abattoirs, where the inspection is not so rigid as it is at the Island? What I should like to say is this—what becomes of that meat?
602. *Mr. Wilks.*] You think there is some brought into consumption? Yes.
603. *Chairman.*] Would it really pay you better to have private abattoirs than to go to Glebe Island—that is, so far as your ease, comfort, and general prosperity as a carcass butcher is concerned? Well, as far as prosperity goes, no doubt it would. If I had a private slaughter-house, and an inspector was appointed there, no doubt I should be able to grease his hand.
604. You think it is possible, then, to grease the hand of the ordinary inspector who comes round? I do not say they do it, but it might be done.
605. You think it is possible to grease the hand of the ordinary inspector who goes round to suburban or country slaughter-houses, but that remark is not applicable to the Government inspectors on Glebe Island? No; I do not say it is applicable even to the country slaughter-houses, but I say it would be possible, if I had a private slaughter-house, to work things in that way, and that is why I say that either the Government or the Corporation should have the control of the Abattoirs.
606. The Government have control of them now? Yes.
607. Do you think that the management of the Abattoirs has improved since they were placed under the rule of the Board of Health? No; I do not think so at all. I do not think the Board of Health has made much improvement in the Abattoirs, as far as that goes.
608. As a carcass butcher, can you see any great improvement or the reverse since the management was placed under the control and direction of the Board of Health? None whatever. The same thing exists now as did before.
609. As a carcass butcher, do you find the management at the present time equal to what it has been in the past under other people? Yes; in fact, better. I do not think the Abattoirs could be under better management than they are at the present time.
610. Does it not strike you as being rather contradictory when you say that the management has not improved under the Board of Health, whilst in the next breath you say that you think that the Abattoirs are under better management than they were previously? The Government would not vote the money required to improve them. The management is right enough. If the Government voted money for the Abattoirs to be improved there is room for improvement, and they could be improved.
611. Do you think that it is possible, by expending a fair amount of money on the present Abattoirs, to make them up to date? Yes; and second to none in the world.
612. The present Abattoirs? Yes.
613. A complaint has been made by other witnesses that the space between the two rows of slaughter-houses is far too narrow for carrying on the large amount of trade done in meat at the Island? It is too narrow.
614. Would it be possible to get over that difficulty while the present Abattoirs were allowed to remain? Yes.
615. What would you suggest to get over it—widening the space between the two rows of slaughter-houses? By pulling down the mutton slaughter-houses, which are out of date.
616. The beef houses, you think, are up to date? The beef houses are right enough.
617. Do you deal in both mutton and beef? No, in beef only.
618. You do not touch mutton at all? We used to kill it, but we do not at the present time.
619. You knew Mr. Kenway, the late manager? Yes.
620. During his administration were matters conducted satisfactorily to the carcass butchers and to the buying public at the Island? I always found that to be so. I never heard of anything to the contrary.
621. You have not been able to form any different opinion since the change of management took place? Not at all.
622. Since Mr. Shelley's appointment? Not at all.
623. Do you think that any favouritism is shown towards one carcass butcher or butchers as compared with others? No; that sort of thing is only idle talk.
624. Have you found generous and fair treatment all round from the management of the Island? Always. I always found things dealt with fairly there as regards everybody.
625. Have you thought the matter out as to the best method of getting stock to the Island without the inconvenience

inconvenience that is, generally speaking, supposed to be caused to the public by the driving of cattle and sheep and other stock to the Island along the public highways between the Flemington sale-yards and Glebe Island? As I have pointed out, there could be a private road striking off near O'Brien's place, and going between Inglis's and Keep's, and down across the reclamation—the canal—and through Ramsay's Bush, and then coming out by the bridge on the Parramatta Road—the North Road, as we call it—which comes down by Abbotsford.

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626. Are you aware that even the road you have just selected would cross at least a dozen public thoroughfares? Streets, no doubt; but not Government roads.
627. Macadamised roads of different municipalities? Yes; public thoroughfares, no doubt, it would cross. It would, for instance, cross the tram-line.
628. Would that not necessitate, in driving cattle particularly, as much care and attention as in driving them along a straight road now? Yes.
629. Cattle would be as liable to get away from a mob in crossing over those thoroughfares as would be the case under existing circumstances? Yes.
630. Have you ever thought out the advisability or otherwise of having a branch line of railway from the main line to Glebe Island? I have thought of that, and have spoken of it on different occasions—a branch line of railway running from Stanmore down by White's Creek and on to the Island. There is a lot of Government ground there of no use at the present time.
631. You know the route *via* White's Creek very well? Yes.
632. And a single line of railway, you think, would be sufficient, and it could be constructed at small expense and with a very small amount of resumption of private land? Yes, a very small amount.
633. You have seen cattle slaughtered in the district of Belmore? Yes.
634. And before half an hour has elapsed you have seen the same meat fly-blown? Yes.
635. The same thing occurs continually at suburban and country slaughter-houses? Yes.
636. A similar experience has never been known at Glebe Island? That is true.
637. That is probably owing to the absence of blowflies on the Island? There are no blowflies there, and very few other flies. Why it is I do not know; but it is so.
638. And you are of opinion that the country-killed meat sent in refrigerating chambers in the summer-time will, before that meat is delivered into the refrigerating cars, be fly-blown? Yes; some of it at times. I do not say all of it.
639. During the very hot weather? Yes.
640. And the great drawback of the country-killed meat is the presence of blowflies, and the danger of the meat being fly-blown? Yes; that and the excessive heat.

Charles Thompson sworn and examined:—

641. *Chairman.*] What is your address? 41, Weston Road, Roselle, Balmain.
642. What is your occupation? Butcher.
643. Retail or wholesale? Retail; but I have had some experience also as a wholesale butcher.
644. Have you lived long at Balmain? Since about 1880.
645. You have had a good deal of experience in connection with Glebe Island? Yes; a fair experience.
646. You visit there at least once a day, I suppose? Often twice a day, but in the cold weather I may go there only twice a week.
647. The place where you live, as well as your business, would give you a good opportunity of judging as to the general conduct of Glebe Island, both inside as regards the slaughter-houses, and outside, in the matter of cattle-driving? Yes. They pass my door.
648. *Mr. Wilks.*] Do I understand you have been a carcass butcher? I have in connection with retailing sold a few carcasses.
649. What has been your experience of the general management of the Abattoirs? Well, the faults I find with that are the cattle-droving, and the cattle not being sufficiently rested before they are killed.
650. The meat is inflamed? Yes; the meat is harassed.
651. How would you get over that difficulty? I would have the cattle kept in a paddock, and not killed for two or three days after they are bought, and to be fed and watered there. The expense of keeping would be nothing, for cattle fetched from the country will not eat much; they mostly require rest.
652. It would be a considerable gain to the consumers of meat, because healthier meat would be put on the market? Yes.
653. What is your opinion of the present Abattoirs;—would you recommend their removal or their continuance at Glebe Island? I would rather see them removed, unless a railway could be constructed to Glebe Island, and even if you had such a railway, I do not know how you would feed the cattle on that area of ground.
654. To where would you remove the Abattoirs;—which scheme you have heard of meets with your approval most? I would suggest Kurnell.
655. Have you been to Kurnell? Yes.
656. What recommends that site so much to you? It is away from all population, and if any people went to live there subsequently, they would do so at their own risk. The inhabitants would complain if you removed the Abattoirs to a populous suburb.
657. Then you consider there is a risk where the Abattoirs are at the present time? Yes.
658. As you live near the Abattoirs, will you tell us what is the general feeling there;—is it in favour of their continuance or their removal? I think it is in favour of their removal. But I suppose that the people who work at the Abattoirs would rather have them continued at Glebe Island.
659. What is the opinion of the people who live in Weston Road, with whom you do business? You must know that wild cattle are dangerous, and have been known to horn people along the road, and also to horn horses. Only last week a wild bullock had to be shot near our place.
660. Do you think that that could be obviated by limiting the time for driving, say, between 12 p.m. and 6 a.m.? No doubt that would get rid of a great deal of the trouble.
661. Have you noticed that the only objection that there is against the removal of the Abattoirs from Glebe Island is that some people are afraid that that site will not be used for some other business purpose;—suppose the people in your neighbourhood knew that the Island would be used for some larger business purpose, would they favour that more than the present Abattoirs? Certainly; I think it would improve property.

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- C. Thompson. 662. Do you think that Glebe Island is well suited for the tinning and export of meat? Yes; it is surrounded by water.
- 25 Aug., 1896. 663. What is your opinion of killing meat in the country, and bringing it to the city chilled? Well, according to the butchers in general, that meat is much better than the Glebe Island meat, because the cattle are killed on the pastures, and are never killed in a heated state.
664. That meat is generally in a healthier state than the meat you receive from Glebe Island? Well, as a rule, any retail butchers prefer country killed meat to Glebe Island meat.
665. Is that your own personal opinion, or is it the opinion you have gathered by coming in contact with other retail butchers? I think it is better chilled, but not frozen.
666. You have no interest in a chilled meat company to lead you to speak like this? No.
667. Neither directly nor indirectly? No.
668. Have you heard of the probability of chilled meat being put upon the market fly-blown? I have never seen any, and I have passed by the market very often.
669. Under the present system of killing at private abattoirs in the country, have you heard of any carcasses of diseased animals coming on to the Sydney market? I have heard it said that a quarter, or one or two quarters, have been condemned at the markets, but that was some time ago.
670. But you do not think it is general? No.
671. Is there not a rigid inspection at Glebe Island to detect disease in meat? I know there are three or four inspectors there to do it.
672. Do you think they do their work? Well, I suppose they do attempt always to detect disease, but it is possible, I think, to deceive the inspectors at times.
673. By what means do you think they could be deceived—carelessness of inspection? That would be one thing.
674. Or connivance of the people themselves? They might have some already for them. People would naturally try to get it through if they had a diseased bullock.
675. Do you believe that sometimes they have passed it through? I do not know for a positive fact, but it is generally thought so.
676. It is not mere talk, but it is thought by experienced people that occasionally diseased meat does get through? Yes. It is only common sense to think that if you have a bullock that cost you so much you would try to get it through if you could, instead of losing so much on it.
677. If there were an increased number of inspectors do you think that could be prevented? It might be, but there is always a possibility of that sort of thing occurring.
678. *Mr. Law.*] You said that meat killed and chilled in the country is better for consumption than meat killed at Glebe Island? Yes, for the reasons I have given—that it is not killed in a harassed state.
679. But do you know for a fact whether it is apt to be sold at an increased price to the consumer;—can you get meat killed in the country as cheap per bullock or per quarter as you can get other meat? We buy it as cheap, generally, as Glebe Island meat can be bought.
680. In regard to the cattle coming down in a heated state, and then being killed, when a large number of bullocks were brought down by the steamers from the rivers or Queensland, did not the bullocks come down in much better condition than for consumption than when they were driven down? Well, they are liable to be knocked about on the boat. I have experienced that myself.
681. But would they not get here in a better condition than if driven to Sydney a number of miles? Well, as far as the weight of the cattle is concerned, I daresay you would actually get more weight at your destination if the cattle came by steamer than if they were driven, because, I think, the inside fat would be got rid of by driving.
682. Do you not think that the Abattoirs at Glebe Island, having such a good fall towards the water, would have greater facilities for carrying away debris or anything calculated to cause disease than would be the case at Kurnell where the land is level? There is plenty of land at Kurnell, and I think it has as good a fall as the land at Glebe Island, and you could gravitate it to the ocean.
683. *Mr. Bavister.*] You say that Glebe Island would be suitable for the purposes of meat export. If that is so, why should not Glebe Island be also considered to be the best place for killing purposes? Well, it is too close to the population. People do not like it so near them. It is against the value of property.
684. You are giving the opinion of the population, and not your own view of the matter? Well, it is better to keep meat, I should say, near the ocean.
685. Do you find, as a person engaged in the meat trade, that meat keeps better in a moist atmosphere than in a dry one? Well, I know my experience is, that meat keeps much better near the ocean. But perhaps the cattle I have seen killed there was properly killed after being allowed to rest, whilst the cattle killed at Glebe Island is heated, and the public have to suffer in eating bad meat owing to its being killed too soon after being driven.
686. But you said that meat kept better on the coast, near the ocean, than it did in other localities? Yes.
687. I assume that on the coast, near the ocean, the atmosphere is damper than it is inland? Yes.
688. You have had experience in your own place of business that some periods of the year are better than others for meat;—have you found meat keep better in dry weather or in moist weather? Better in dry weather than in muggy weather.
689. Therefore, your opinion, as just expressed, is not fully borne out by your own experience? Well, in muggy weather I think it does not keep so well as in hot dry weather. But it is not the same on the coast.
690. A question was asked you as to the height of the slaughter-houses above the level of the water at Glebe Island, and as to whether it did not constitute a healthy position for the slaughter-houses, by enabling the refuse to be carried away;—is it not a fact that that does not depend so much upon the height of the slaughter-houses above the level of the water as on the fall of the water? I could not say anything about the fall of the water.
691. If you had two positions, one of which was 30 feet above the level of the water, and discharged into sluggish water, whilst the other was only 3 feet above the level of the water and discharged into a rapidly running stream, which would you consider most fit to carry away the refuse? Well, of course, the one with a good current; but you get a very good current off Kurnell.
692. *Chairman.*] I think you stated a little while ago that people who lived round about Glebe Island complained simply on account of the Abattoirs being close to them? Yes.

693. Were those Abattoirs there before the people built those houses, or were the Abattoirs put there after those people had built those houses? I could not say. C. Thompson.  
25 Aug., 1885
694. But during sixteen years you have seen hundreds of houses built round about you? Certainly.
695. Therefore, people who are complaining of the Abattoirs being close to them, of their own free will, bought land and built houses close to the Abattoirs? There is no doubt about that.
696. Has it ever struck you that the same thing might occur in reference to other places—that, if abattoirs were erected there, people would go and buy land and build quite as close to the proposed new abattoirs in some other locality as they have done to those on Glebe Island? Yes; but I suppose that the Government would buy sufficient land to keep them reasonably far off.
697. Have you noticed anything very offensive where you lived coming from the Abattoirs? No.
698. You get no objectionable smell? No.
699. You do not think the health of the district surrounding your place is prejudicially affected by the presence of the Abattoirs at Glebe Island? I do not think the health is affected. It is not, so far as I know.
700. You have a family, I presume? Yes.
701. All fairly healthy? Yes.
702. And you have reared them in the district? Yes.
703. You have not heard of any complaints from either of the doctors practising in the district or from the people themselves about the unhealthiness of the district owing to the presence of the Abattoirs? Well, I have heard, but I would not take much notice of it. I think it is mere fancy. I do not think it is unhealthy.
704. You personally consider that it is just as healthy now, with the Abattoirs at Glebe Island, as it would be if the Abattoirs were removed, and some other industry started there? Yes; I have never had any objection as regards health.
705. *Mr. Law.*] You have been in the Abattoirs, backwards and forwards, about sixteen years;—have you ever seen a blow-fly on Glebe Island? I cannot say that I have ever seen any blow-flies in the slaughter-houses; I have not taken particular notice; but I have seen them outside the slaughter-houses.
706. *Mr. Bavister.*] What! on the Island? Yes; I may be making a mistake. I have not seen any actually in the slaughter-houses, but I think I have seen them outside the slaughter-houses, on the offal.
707. *Mr. Wilks.*] Have you ever visited any other abattoirs? Yes; Riverstone.
708. That is under private enterprise? Yes.
709. I suppose their management is not at all equal to the management of our Abattoirs? Well, in some things I thought it was better.
710. In what things? Well, in the killing of the sheep. They drove them under cover, and they killed them, as near as I can recollect, 10 feet overhead, on battens. They stuck the sheep there, and the blood fell through, and they kept much cleaner. It fell on to the floor, and could be swept away.
711. What is your idea in regard to the movement on foot to place the Abattoirs under private enterprise? I have never thought that out in any way.
712. Well, what is your idea of placing the Abattoirs under municipal control? There is no doubt they could greatly improve on the management at the present time. I looked at the clock the other morning, and noticed that it was a few minutes after 7 when the cattle were going by. That was very late in the day.
713. You think they are very lax? Yes.
714. Do you consider that under private enterprise there would be a danger of ringing the price of meat on the public? I cannot see how that could happen very well with competition.
715. But, supposing the Abattoirs were in the hands of, say, two people, who had different places for slaughtering—could not they ring the price? Yes.
716. Do you not think, then, that that would be the great danger of handing the Abattoirs over to private enterprise? Yes. I would not agree to that.
717. Which do you think is better—State or municipal control? Well, either of those.
718. Which would you prefer—the State, as now, or our own local Municipal Council, who have talked about taking over the Abattoirs;—do you think it would be prudent to hand it over to them? I think they could make it pay right enough.
719. *Mr. Bavister.*] Have you any idea how many cattle could be driven on the road from the sale-yards to the Abattoirs between 12 o'clock at night and 6 o'clock in the morning;—could a sufficient number be driven during those hours? Yes; and twice as many. I have seen men go out after 6 o'clock to fetch them in, and they are supposed to be on the Island at 7 o'clock, and are generally in by 7 o'clock. They fetch them from Homebush on Thursday or Monday half-way, or to within 3 or 4 miles of the slaughter-houses, and go back for them next morning.
720. How long will it take one mob of cattle to go from Homebush to the Island? I think you could get them there in three hours.
721. Are sheep driven as quickly? No.
722. Then, supposing you have half a dozen different mobs of cattle, and as many different lots of sheep, would it be possible for all those sheep and cattle to start from Homebush after 12 o'clock at night and get to Glebe Island before 6 o'clock next morning? Of course they could. They do not all come along the same road to Glebe Island. They come to the Island *via* the Abattoirs Road and down Weston Road.
723. Supposing the sheep could take one road and the cattle another, could half a dozen different mobs of cattle be driven on the road between 12 o'clock and 6? Yes. They do drive the cattle at times within 50 yards of one another, but they are generally a quarter of a mile behind each other.

Arthur Grey Kenway sworn and examined:—

724. *Chairman.*] What is your place of residence? Young-street, Burwood.
725. What is your occupation? None at present.
726. You are out of business? Yes.
727. What were you formerly? An architect.
728. And of recent years you had some connection with Glebe Island? I was Superintendent.
729. For how many years? Six years.
730. Previous to that were you engaged on the Island? Yes.
731. In what capacity? As officer-in-charge of works connected with the meat trade.
732. Mr. Oatley, I suppose, was the Superintendent at that particular time? Yes, at first.
733. You succeeded Mr. Oatley? No; Mr. Jager did.

A. G.  
Kenway.  
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- A. G. Kenway.  
25 Aug., 1896.
734. And you succeeded Mr. Jager? Yes.  
735. You were under Mr. Jager and also under Mr. Oatley for some time? No; independent of them, but under the same Minister—the Colonial Treasurer.  
736. Under the same Minister, but not under the immediate control of either of the two previous Superintendents? No.

THURSDAY, 27 AUGUST, 1896.

Present:—

MR. BAVISTER, | MR. LAW,  
MR. O'SULLIVAN.

J. S. HAWTHORNE, ESQ., IN THE CHAIR.

Arthur Grey Kenway recalled and further examined:—

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737. *Mr. Law.*] What is your opinion in regard to the site of the present Abattoirs? As a slaughtering site it is magnificent, as regards slaughtering and the production of meat. But I confine myself entirely to that in that answer.  
738. Do you think that it makes meat more expensive to the consumer by killing it in the country and bringing it down to Sydney than by having it killed at Glebe Island? If there were no metropolitan Abattoirs and we were dependent entirely on country-killed meat, that would probably result in a dearer price to the consumer.  
739. Have you prepared a statement which you would like to read? Yes. Referring to the question of the Abattoirs site, I may state that I have prepared these notes, which are more valuable than mere verbal evidence would be. They are the result of careful thought. The question of the Abattoirs involves these considerations—preservation of public health, preservation of the interests of the stock-raisers, the stock-buyers or agents, the butchering trade (including carcass and retail butchers, and the consumers), and the purchasers of the waste products—that is, including noxious trades, tanning, fell-mongering, &c.—whilst, of course, the staple industry of the whole Colony from beginning to end, wool, is partially involved in this. Beginning with the preservation of the public health, I must commence with the responsibilities of the Board of Health.

BOARD OF HEALTH'S RESPONSIBILITIES.

In connection with this phase I must be understood to be speaking as a layman, who makes no pretension to expert knowledge of diseases, but at the same time a layman that has made the Abattoir question his special study for many years past, and has during that time had special opportunities for investigating all questions relating to this matter, and to the meat trade generally, and one that ceases to be a layman in all Abattoir questions except the diagnosing and identification of diseases in live stock or meat and their effect upon man.

The first subheading is—

*Inspection of Live Stock arriving at the Abattoir.*

Although at first sight the necessity of this precaution on an establishment where inspection during slaughtering will follow is not very apparent; it is real, because it enables detection of disease in many instances, and the separation of diseased from healthy stock, and their killing under special arrangements.

*Inspection during Slaughtering.*

This is the more important function, and complete inspection during this operation is of vital importance, and can be perfect only when each individual beast is watched by the inspectors.

At present this inspection is far from complete at the Glebe Island Abattoir, the staff of inspectors being far too small. Very many individual beasts escape examination, especially among the smaller stock, and too many opportunities are afforded to conceal disease.

It was only upon my repeated strong representations that the original staff of two (2) was increased by the appointment of three (3) additional inspectors. The Board of Health have empowered two (2) more Abattoir employees with the powers of inspectors, but there are none that possess diplomas, or who have had special training except what experience the Abattoir has afforded them.

The Government Veterinarian has control of the whole Inspecting Staff, and directs any discretion used in passing or condemning meat.

It is nakedly apparent that a specially trained staff should be appointed to these important duties.

The present inspectors and assistant inspectors have by now had time to gain practical experience and have undergone an examination by the Board of Health.

In alluding to the absence of diploma'd inspectors I am referring principally to their responsibilities and powers of condemning or passing meat, and their discretionary power in so acting; I am not questioning their ability to detect disease.

In the case of the present Chief Inspector these remarks do not apply. His special aptitude in detecting disease in living stock, as well as identifying it in the dead carcass, is not likely to be possessed by a veterinarian who has not been brought up from childhood amongst stock; but, again, it is not always that a gentleman of such stock experience can be found, who has also made diseases such a special study, except beyond what is necessary to his business as a stock-raiser.

Inspection for diseases must be thorough and complete if the objects for establishing a public abattoir are to be achieved. A partial inspection gives the public false confidence, while allowing concealment of disease.

*Condemnation and Disposal of Diseased Meat.*

Carcasses that are pronounced to be diseased or unfit for food are condemned *in toto*. The body, offal, &c., is saturated with kerosene to prevent its entering into consumption, and it is then allowed to be taken away from the premises. The hide or pelt is allowed to mingle with others without any precaution. Bruised carcasses may be condemned wholly or partially as unfit for food.

The condemnation is made on the dictum of the Chief Inspector, but all inspectors have the power to condemn on their own responsibility. The liberty of appealing against such condemnation is allowed the butcher, but the authority appealed to is the Government Veterinarian, who is an officer of the same Department. I think appeal to independent authority should be allowed.

As regards the principle of condemnation, the inspectors are furnished with copies of works supposed to be the newest and best on the subject, but they are totally unarmed with proper implements, having only a knife and their natural unaided sight at command. It would appear that common sense would arm each inspector with a suitable microscope to enable detection of disease in the meat which might not be displayed to the naked eye, and also to guide the inspector in passing or condemning a carcass that may display disease in certain organs, and which may not necessarily be disseminated through the whole body. It appears to me like sending a mariner to sea without a compass.

The absolute necessity of such wholesale condemnation and destruction is worth serious inquiry. In some older countries experience has taught otherwise, and certain meat is allowed to enter consumption branded as diseased, but which is not thought to be necessarily dangerous to health. The same thing is partially done at the Glebe Island Abattoir without branding, but the discretionary power is wholly unprotected by the use of the microscope on meat passed or condemned, standing instructions from the Government Veterinarian to judge according to certain symptoms being the "rule of thumb" by which the inspectors are guided.

The

The following figures, showing stock killed and condemned at this Abattoir during 1895, are of interest:—  
Slaughtered—bulls, 8; bullocks, 77,644; cows, 8,628; calves, 11,807; pigs, 85,925; sheep, 737,281—being 921,296 animals in all. Condemned as diseased—bulls, 4; bullocks, 2,592; cows, 713; calves, 5; pigs, 3,020; sheep, 48. Only condemned as unfit for food, or bruised—bullocks, 17; calves, 1,297; cows, 51; pigs, 58; and sheep, 8.

This gives a total of animals condemned as diseased 6,382, and as unfit for food from other causes 1,424.  
These figures are very startling, and become more so when expressed in money value, calculated upon average values at present market rates, viz., totals condemned—bulls, 4 at £1, £4; bullocks, 2,609 at £6, £15,654; cows, 764 at £4, £3,056; calves, 1,295 at 15s., £971 5s.; pigs, 3,078 at £1, £3,078; sheep, 56 at 6s., £16 16s.—£22,780 1s.

When it is remembered that the institution of a public abattoir governing far wider districts than at present, and the abolition of private suburban Abattoirs, will at least double these figures, the grave importance of this is irresistibly forced upon one's attention.

I think it will be admitted that our stock supplies (with the exception of Queensland cattle) of the present day are freer from disease than they were a few years ago, when the numbers condemned at the Abattoir did not exceed twenty or thirty per annum, and yet it does not appear that disease in man acquired by eating diseased meat was more prevalent then than now, or that this wholesale condemnation is justified by any improvement in public health. Do country residents consuming meat not inspected suffer more than Sydney residents protected by the Glebe Island Abattoir?

I do not advocate the lessening of inspection, but the reverse; but I do advocate that more consideration shall be given to a national industry of such importance as stock-raising, unless very clear and definite reasons are shown in justification of such harsh measures.

There is an apparent inconsistency shown in the small number of sheep condemned as compared with other stock, cattle for instance, of which 3,377 were condemned out of a total of 80,280, while of sheep only 56 were condemned out of a total of 737,281, affording the relative percentage of 3.78 and .007 respectively.

Does such extreme difference in the proportion of disease in the two kinds of stock possibly exist? does the hardship of the journey to the Abattoir weed out diseased sheep so effectually before the flocks reach the Abattoir? or is it not the case that cattle receive more individual inspection than sheep? The proportion of pigs (which receive special inspection) which are condemned confirms the suspicion that laxity of inspection accounts for the discrepancy in the figures. If it is safe to use this discretionary laxity as regards mutton, why is it not equally wise to use the same discretion with beef? Everyone will agree that it is not desirable to use this discretion in dealing with pork. I may add that if mutton were to receive the same rigid inspection as beef its price in Sydney would, in my opinion, be 1s. per pound.

*The killing of stock in a fevered condition*, such as is the case at Glebe Island Abattoir, and for which no one is to blame (as the circumstances surrounding the stock traffic and trade enforce it), must surely be more or less injurious to public health, and is proved in practice to injure the quality and market value of the meat.

*Methods of slaughtering at this Abattoir* are very imperfect. The slaughter-houses are so placed, designed, and are of such limited capacity, that only the crudest methods can be used; the meat is hung in a vitiated atmosphere, and no opportunity is afforded for abstracting the animal heat. The dangers and evils resulting from these causes are obvious. The meat is liable to be contaminated by the absorption of noxious fumes and germs from the vitiated atmosphere, and is frequently decomposing before leaving the Abattoir.

The same causes prevent anything like cleanliness.

Control of sanitary management of the Abattoir should certainly be under the Board of Health.

Control of noxious trades connected with the Abattoir should also rest with the same body.

*Prevention of cruelty to live stock and control of watering and feeding.*—These matters should also be controlled by the same Board, who should have the power to enforce proper treatment of stock during the journey to and after arrival at the Abattoir.

The bruised condition, exhausted and the fevered state of stock is matter that has been frequently brought under notice of the Government by myself, but nothing practical has been yet done to lessen these evils.

*The present system of condemning and destroying stock consigned to the sale-yards*, under clause 3 of the Diseased Animals and Meat Act of 1892, is the cause of endless disputes and friction in the stock trade, and is conducive to the concealment of disease. The Act fails in its objects by its severity in punishment for offences, which are not always wilful, and sometimes unavoidable, and in causing the entire loss to fall upon the individual.

The only method that will succeed in ensuring the detection of disease in live stock is one that, while punishing severely the knowing or wilful concealment of disease, or even carelessness in dealing with the same, should offer every inducement for its exposure, by protecting the innocent from punishment, and ensuring that the total loss shall not fall on the individual.

A small inspection fee upon all stock consigned to the sales-yards, and again on its discharge from the same, would afford a fund that, if subsidised by the Government to the extent of one-third, would partially compensate the individual for the loss, and equally divide the burden between the stock-producer, the purchaser, and the public (as represented by the Government). This system should apply only to cases of disease discovered after the stock has been inspected and admitted to the sale-yards; any cases discovered prior to such admission should be thrown upon the consignor or owner.

*Note.*—By far the greater number of cases are discovered after the stock pass through the sale-yards.

*Licenses to Butchers.*—The Board of Health should have the power of granting, withholding, or withdrawing licenses to slaughtermen, carcass butchers, and shop butchers, making a clean bill of health (as regards certain diseases) a condition of granting a license. In view of the powers of absorption possessed by meat, and the amount of personal contact it suffers in its various handlings before it reaches the consumer, the obvious wisdom of some protection of this kind is apparent.

In conclusion, I wish it again to be understood that I do not pretend to be any expert in diseases or of their cause and effect. These notes are written with no intention to criticism, but they simply are an effort to express what I myself think is a common-sense view of the various phases of the abattoir question, and the figures quoted as to stock killed and condemned were published by the Board of Health, and appeared in the *Herald* of 15th February, 1896.

#### STOCK-RAISERS, SELLERS, AND MEAT TRADE.

##### *Site of Abattoir.*

The choice of site of a metropolitan abattoir must be governed by the following considerations:—

- The extent of population to be provided for.
- Extent and position of the area so populated.
- Isolation from such population.
- Isolation from future encroachments.
- Avoidance of any possible complaint of nuisance.
- Railway connection to stock centre.
- Railway to metropolis, suburbs, and districts to be served.
- Connection to seaport.
- Ample area of cheap land.
- Elevation of greater part.
- Permanent water supply.

##### *Area of Abattoir Ground.*

The area provided must be sufficient to fulfil the following requirements:—

- All future extensions.
- Isolation from future growth of population, should the position of the site itself not ensure it.
- The Abattoir proper, with its yards, roads, chill-rooms, desiccating works, &c., &c.
- Sale-yards, reserve-yards, roads, &c.
- Railway buildings and sidings, and possibly canal and docks.
- Receiving and resting paddocks.
- Stock storage and agistment paddocks.
- Farms and orchards for the utilising of waste materials and liquors.
- Accommodation and isolation of noxious trades connected with the Abattoir.

With the foregoing requirements in view, it appears necessary to choose the site of the abattoir somewhere between Blacktown and Parramatta, that being the district nearest Sydney where proximity to stock centre, and access to central meat market and seaport, will be most conveniently secured, while the comparative cheapness of the land will enable the acquiring of sufficient area to meet the requirements of isolation, paddock, and other accommodation, &c., &c. It should not be difficult to secure the advantage of elevation.

For abattoir, chilling, and desiccating operations about 30 acres would be sufficient.

To

A. G.  
Kenway.  
27 Aug., 1890.

To allow for saleyards, receiving paddocks, and partial furnishing of resting paddocks as adjuncts of the Abattoir, a total area of 500 acres would be required.

But to meet all the requirements enumerated an area of 2,000 acres would be necessary.

This large area will increase the returns from the Abattoir, and be a safe and profitable investment, for while affording a natural and economical means of disposing of, and utilising all the waste materials and liquours produced by the Abattoir, noxious trades, &c., which otherwise would be a very serious charge in the working expenses, it will afford a handsome revenue from rents charged for farm and orchard land, agistment fees, &c. The large area will greatly improve the exigencies of the stock market by giving means to meet any sudden glut or depletion of the market, the fluctuations of the carcass butchers trade will be largely prevented, the stock will be killed in a cooler and sounder condition, and the quality and value of the meat will be enhanced.

The rents from the noxious trades sites will return profit on the outlay upon land occupied by them.

Some strong objections will be made to the distance of such a site from Sydney, but if special trains are run to the Abattoir, the loss of time incurred will not be serious. In these days of refrigeration such distance from town has no significance as regards conveyance of meat in proper condition. The cost of extra freightage will be more than covered by the saving of droving and paddocking expenses. The suburbs between Homebush and Glebe Island will be immensely benefited by the abolition of droving of stock through their streets, and the animals themselves will be saved from a large amount of suffering.

The district suggested will be easily connected to our main water supply, and the large area recommended will allow economy in its use by the conserving of the local rainfall for the use of stock, &c. It may prove profitable to pump salt water and supply by gravitation for refrigerating purposes, and this water could be allowed to flow back to its source in an unpolluted condition. The comparatively small quantity used in cleansing the Abattoir might with advantage be put on the land.

*Memo.*—The adoption of this site would entail the closing of the Municipal Sale Yards at Homebush, for it is imperative that the sale yards for all stock shall be a part of, and be immediately adjacent to, the Abattoir. The question of compensation is beyond the province of these notes, but it will certainly arise directly any action is taken in adopting a site where these saleyards cannot be utilised.

#### REASONS WHY THE ABATTOIR SHOULD BE REMOVED FROM GLEBE ISLAND AND LOCATED FURTHER INLAND.

Public prejudice against the existence of an Abattoir amidst thickly-populated portions of a town will always exist, and will, sooner or later, result in its removal.

Balmain, which is the suburb most largely benefited by trade interests ensuing from the existence of the Abattoirs in its present site, is the only municipality that protects against its removal. Very strong desire for its immediate removal comes from the rest of the population in and around Sydney. Even the carcass butchers and shop butchers are not unanimous in desiring its continuance.

Although the site is admirably located as regards centralisation with railway, sea port, metropolitan meat trade, &c., it is surrounded by a portion of the harbour, the water of which is already very much fouled, and which, for want of "scour," must eventually become as bad, or worse, as that in Darling Harbour. The result is, and will be, an atmosphere too vitiated to benefit the meat. Again, land is already too valuable in this part of Sydney to be set apart on a sufficient scale for the purpose of one particular trade.

It being impossible to allow the erection of works for noxious trades connected with the Abattoir on this site, great unnecessary expense, and also nuisance, results from the carting of fat, heads, hides, pelts, &c., through the town on its way to the boiling-down, felmongering, and other works.

Although we cannot but believe that it is possible to avoid all nuisance from desiccating operations, with improved appliances, I know of no appliances yet made that do not, more or less, create some nuisance occasionally during practical operations, and it requires but a few occurrences of such offence to raise a general outcry from the public against the whole establishment.

Again, is there any vital necessity, or preponderating advantage to be gained from such centralisation?

By adoption of refrigeration, distance from town has ceased to be of much importance in relation to position of the Abattoir, so long that it is within easy reach of business men connected therewith. Cheapness of land, and the acquiring of large areas, present, of themselves (for reasons elsewhere explained) sufficient inducement for removal to the site proposed in these notes. Isolation, stock sales and treatment, purity of atmosphere, concentration, economy of working, utilising of waste products, &c., all point in the same direction.

As regards the coast-borne small stock, its trucking to the new site will not be so objectionable, or so cruel to the animals, as the driving through the public streets to Glebe Island.

As regards cattle imported from Queensland or other Colonies in exceptional seasons, and landed in the past at Glebe Island or elsewhere on the Parramatta River, and then driven to Homebush, such driving is one of the greatest evils sought to be abolished, and can be cured by trucking to the Abattoir, or by the importation of the meat in a chilled state, which could then be delivered direct to the metropolitan market or store rooms.

Certain existing businesses and vested interests would be certainly disturbed or destroyed; but no reform for the public good is ever effected without this result, which is generally met by compensating those who can establish a sound claim. The cost incurred by such compensation should not deter such a necessary reform.

Further reasons that urge the removal of the Abattoir from Glebe Island are:—The continual and distressing noises, which are more noticed at night time, created by pigs and calves. The cattle are not so disturbing, but on cold nights both pigs and calves create a ceaseless din, which it is impossible to become callous to. The surface drainage from yards, &c., and the waste manure from the Abattoir and from the desiccating works (which are more or less charged with organic matter), all tend to foul the waters of the harbour; and it is only by connection to main sewerage system that this evil will be overcome.

The great value of the land at Glebe Island, as compared with that at the site proposed, will greatly enhance the annual charges against the Abattoir if retained at the former site.

The levelling and filling, deviation of public road, and connecting railway to make the site available for modern requirements, as roughly estimated below, also add very seriously to the annual charges:—

Levelling off and filling in Glebe Island to suit Abattoir, 1,000,000 cubic yards, at 1s. 3d. ....	£75,000
Sea wall, about 1 mile, say.....	5,000
Wharves, &c. ....	5,000
Altering bridge approaches .....	1,000
Connecting railway, say, 3 miles, at £5,000 per mile, including land.....	30,000
Diverting public street.....	1,000

£117,000

Value of land occupied by Abattoir and saleyards, about 50 acres, at £2,000 .....

100,000

£217,000

Interest on this amount, at  $3\frac{1}{2}$  per cent., as an annual charge against the abattoir, £6,618.

This charge is for the site only, with its contracted area, which fails to meet many of the most important requirements,

The proposed country site with 2,000 acres, at (say) £20 per acre, would cost .....

£40,000

Levelling (if any) ..

5,000

Connecting railway, say .....

4,000

£49,000

Value of land occupied by Abattoir saleyards, resting and agistment paddocks, noxious trades sites, farms, orchards, &c., as above, will make an annual charge against the Abattoir at  $3\frac{1}{2}$  per cent. of £1,718 only, and a large proportion of this will be returned from rents, adjustment fees, &c., for land that is not used for distinctly Abattoir purposes.

#### THE PROPOSED SITE AT HOMEBUSH.

The proposed site at Homebush for the new Abattoir, presents the advantage of proximity to the valuable existing saleyards, upon which so much money has been expended by the Sydney Municipal Council, and which returns them a handsome revenue.

But

But its adoption is prevented by its proximity to existing population, whose property will be seriously depreciated by the institution of an Abattoir there, however perfect it might be, and the want of sufficient area of cheap elevated land for its proper requirements, and for its complete isolation. The attempt to establish connective noxious trades would lead to the condemnation of the entire scheme.

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#### REASONS FOR RETAINING THE ABATTOIR AT GLEBE ISLAND.

Although the Abattoir possesses many imperfections, and is the direct and indirect cause of numerous justifiable complaints, remedial measures can be taken to remove very many of them.

By cutting down Glebe Island and so increasing its area, and resuming the reclaimed land in White and Roselle Bays, sufficient area could be acquired to found an abattoir, complete with all modern appliances and improvements, and with saleyards in proper juxtaposition. With improved appliances, no nuisances from escaping odours ought to occur. By railway connection, stock could be delivered direct to the saleyards, and all droving in the streets would be obviated.

Large water frontage in the principal seaport of the colonies would be gained. All business could be transacted in the metropolis of the Colony, and both import and export business could be carried on with the greatest convenience. Waste liquors could be run into the main sewerage system, if connection is made, and only the solid waste need be sent to sea.

Coast-borne stock would need to be trucked to the Abattoir at Blacktown or Homebush, and brought back again in the shape of meat. The disturbance or destruction of existing businesses and vested interests would result from such removal.

*Note.*—The necessity of entirely rebuilding the present Abattoir upon entirely new and modern designs, goes without saying, and needs no explanation here.

#### FURTHER REASONS FOR RETAINING THE ABATTOIR AT GLEBE ISLAND.

The greatest cause of complaint against the abattoir has been the driving of stock through the streets. This can be remedied by bringing a railway from somewhere near Petersham and having the sale yards in the White Bay reclamation as its terminus.

No illness in the surrounding neighbourhoods has been traced to causes resulting from the abattoir.

Its removal will cause incalculable ruin to the many workmen engaged at the abattoir who have put all their savings into the purchase of land and erection of homes for themselves and their families. Their case should be dealt with in the most careful manner.

#### CONCLUSIONS.

The conclusions I have arrived at from a thorough consideration of these notes are :—

1. That a Metropolitan Abattoir is, and always will be, necessary.
2. That country abattoirs should be under Government control, but such control can be only gradually applied.
3. That, under such control, it is not very material, except for the reasons stated, as to what body or persons carry on the business of the abattoirs, conditionally upon the due observance and satisfaction of the following requirements, viz. :—Suitableness of site, suitableness of design, suitableness of equipment.
4. That it is extremely unlikely that municipal bodies would be in a position (being small elective bodies), or that private enterprises would be willing, to expend sufficient capital as is required to build and carry on a practically perfectly abattoir, or one that would entirely meet all conditions imposed by the Government.
5. That the choice of site and erection of the establishment will be thrown upon the Government.
6. That the executive, municipal, or other body, or persons undertaking the responsibility of the Abattoir, must necessarily have permanent tenure for a prolonged period, and the total governance over definite "Abattoir Districts" within which no private abattoir shall be allowed to exist, except by the specified permission of the Government and the consent of the occupier of the metropolitan abattoir.
7. That the whole Colony should be gradually divided into abattoir districts, in which the principles governing the Metropolitan Abattoir District may be applied. Newcastle requires immediate attention.
8. That the principles underlying those suggested for the governance of the meat supply, are almost equally applicable to most other branches of our perishable food supplies.
9. That all data collected in these notes point to a site between Parramatta and Blacktown as the best that can be chosen.
10. That the scale upon which the metropolitan abattoir must first be instituted, must be somewhat larger than is necessary to meet the immediate demands of the districts to be served, for although on the one hand the extension of country killing will tend to diminish its business, on the other hand, growth of population and incertitude of seasons necessitates the Abattoir being capable of meeting the fullest requirements.
11. That the abattoir site must accommodate the noxious trades naturally connected therewith.
12. That the abattoir must be equipped with refrigerating and desiccating appliances.
13. That all waste solids and liquids must be utilised on the land surrounding the Abattoir, in order that no polluted drainage may escape therefrom.
14. That the Board of Health should be responsible for, and be properly empowered to enforce the—  
Prevention of meat entering into consumption that is dangerous to public health.  
Sanitary control of the abattoir and noxious trades.  
Prevention of unnecessary cruelty to live stock, and control of watering and feeding at the Abattoir, and during transit.  
Control of the methods of slaughtering and dressing of meat.  
Sanitary condition of men, vehicles, &c., engaged in the business.
15. That no noxious trades other than those connected with abattoir business should be allowed upon the ground.
16. That the interests at stake are of vast importance and of a national character, and that money should not be spared in carrying out in the completest manner the objects sought to be attained.
17. That the whole expenditure will prove a safe and paying investment. That at the present rate of fees, charges for chilling, returns from saleyards, resting and agistment paddocks, noxious trades, farms, orchards, &c., will yield sufficient revenue to pay at least 4 per cent. on the outlay, while providing a reserve fund for additions and improvements, and a suitable sinking fund.

740. *Mr. O'Sullivan.*] What becomes of the condemned carcasses you spoke of? After being saturated with kerosene at the abattoirs they are removed from the premises.

741. But what are they used for? Boiling down.

742. For what? For tallow, principally.

743. You said that more rigid inspection of mutton would make it a shilling a pound in Sydney? Yes; if the inspection of mutton were as rigid as the inspection of beef.

744. What reason have you for saying that? If the same proportion of condemnation occurred in regard to mutton as occurs in regard to beef it would be such wholesale condemnation that the price of mutton must go up.

745. Would it go up to as high a price as a shilling a pound? I have known fourpence charged.

746. You stated that decomposed meat sometimes leaves the abattoirs;—is this meat sold to the public? Yes. I do not think I said decomposed meat, but meat beginning to be decomposed. It is allowed to go to the public. The mutton is hung in clusters of five or six, on one set of hooks, and in warm weather the animal heat cannot get away; and if you put your hand in between any of the carcasses and withdraw it you get the smell of decomposition.

747. I understand from your evidence that you would prefer to see the abattoirs remain on Glebe Island if certain improvements were made? As far as the slaughtering business alone is concerned there is not such a good site anywhere else, but combining that matter with the other questions—the questions of the driving of stock and the condition of stock on arrival at the Abattoirs—it forces me to recommend a site where you could get a much larger area than that at Glebe Island.

748.

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748. Do you know anything about a proposed site for noxious trades at Kurnel? I know something about it, but not much. My objection to that site is that it is right away from the centre of business; it is not on a stock centre of the railways. First of all, I should say that I am totally opposed to the abattoirs, which produce the meat for the people of the Colony, being located in a place where all noxious trades are allowed to be carried on without discrimination. Meat absorbs smells, as well as diseases, equally as much as milk does. Of course if you allow noxious trades to congregate you allow them to carry on their operations with a very wide latitude. But if you allow a noxious trade to be carried on within the metropolitan district, you force the manufacturer to find out some way of carrying on his business without creating a nuisance.

749. You suggest that a place somewhere between Parramatta and Blacktown would be a good site? My reason for choosing Blacktown is that it is a railway junction and could be made the stock centre for all the railways.

750. Could you get a sufficient water supply there? We could get the Nepean water supply at Blacktown. I should certainly prefer having the abattoirs nearer a river, where, for the sake of economy, we could get salt-water.

751. Where would the water run to after it had been used at the Abattoirs? On to the land. No noxious drainage at all should be allowed to go from the land where the abattoirs were located.

752. You would utilise the water for irrigation purposes? Yes; that is one reason why such a large area is required.

753. I suppose that that water would be of a fertilising character? Exactly.

754. *Mr. Law.*] According to the figures which you had worked out you stated that the total cost of up-to-date abattoirs on Glebe Island, including the levelling of the Island, the construction of a sea-wall, wharfs, a railway, saleyards, &c., would be £217,000? Yes; preparing the site only.

755. And the interest chargeable on that, at  $3\frac{1}{2}$  per cent., would amount to £6,618 per annum? Yes.

756. You also stated that somewhere along the line—at Blacktown—you could provide abattoirs, &c., at a cost of £49,000? Yes; site only.

757. And the interest chargeable on that would be £1,115 per annum? Yes.

758. You also stated that there was a great noise emanating from the abattoirs at Glebe Island in consequence of the calves and pigs making a great disturbance at night? Yes.

759. As that occurs in the night-time, would it reach the ears of the people at the Glebe? Yes.

760. Right across the water? Yes; and it would reach as far as Annandale. There are frequent complaints.

761. From the tenor of your remarks, it would appear that on the whole you favour the removal of the Abattoirs from Glebe Island? On the whole, yes.

762. Could not cattle be brought from Queensland and the northern rivers by sea to Sydney and landed on Glebe Island in better condition and at a cheaper rate than cattle could be brought from Queensland or the northern rivers to Blacktown? At present they have, on arrival at Sydney, to go up to the Homebush Saleyards. They have to be driven there, and stay there while they are being sold. Afterwards they have to be driven back again. After their sea voyage they are really more knocked about and in a more highly-fevered condition than stock that comes even from Bourke; but if they were trucked from the wharfs where the ships arrive straight to the abattoirs they would be no worse off, but slightly better, than under existing circumstances.

763. They would be in better condition than if they had been driven a long way? Yes.

764. I understand that they are not killed directly at the abattoirs, but are actually driven to Homebush and then back again and killed? Yes; thereby creating double nuisance in driving.

765. You have a pretty good idea of the feeling at Balmain, and I think you stated that the only people who desire the retention of the abattoirs at Glebe Island are people residing in Balmain? Yes.

766. And you said that the people outside Balmain were desirous of having the Abattoirs removed from Glebe Island? Yes.

767. I believe that, so far, the only evidences that have been observable with regard to any objections to the abattoirs being at Glebe Island have been at the Glebe and at Drummoyne:—those are the only places where public meetings against the retention of the abattoirs at Glebe Island have been held? I am not alluding only to more recent meetings, but I have a scrap-album containing extracts from newspapers, which have been published ever since my connection with the Abattoirs, and that has been a matter of continual public complaint. All the railway suburbs have been unanimously in favour of the removal of the abattoirs from Glebe Island on account of the stock-driving nuisance.

768. All the trouble with the railway suburbs has been on the score of the driving of cattle and sheep? Yes; the Glebe people have always complained and agitated for the removal of the abattoirs from Glebe Island. The people of Annandale have done the same—when Annandale was part of Balmain—and the people in a portion of Balmain have also agitated in the same direction. The Pyrmont people have done so too, and likewise Sydney residents. There have been no meetings in Sydney on the subject, but correspondence has taken place in newspapers, and the question has repeatedly arisen in Parliament. There have been meetings recently, of the result of which I am in ignorance, but I think I am correct in saying that as a municipality Balmain is the only suburb that has voted for the retention of the abattoirs in their present site, and even then not unanimously.

769. Have you been present at any of the public meetings held outside Balmain? Only at one.

770. Where was that? At Glebe Point.

771. Was not that a very small meeting? Very small indeed; you could not call it a public meeting.

772. You were not at the Drummoyne meeting? No.

773. So far as you know the meetings that have been held outside Balmain have not been attended by the public at all? No.

774. In other words, they cannot be properly designated public meetings? Even the Balmain meeting was not a large one. You could not call it an evidence of public interest being taken in the question.

775. *Mr. Bavister.*] Mr. O'Sullivan questioned you in regard to your statement that strict inspection would increase the price of mutton to a shilling a pound? Yes.

776. In forming that opinion, did you allow for the value of the by-products of the animal? No; I was simply alluding to the meat.

777. You gave a comparative statement as to the cost of two sites—in connection with the one on the Island you allowed £10,000 a mile for the construction of a railway and resumption of land? Yes, £30,000 altogether.

778. Did you make any estimate as to the cost of railway connection with the other site? Yes, £4,000.
779. You also stated that the present abattoirs, in order that they could be made proper use of, would require rebuilding and remodelling? Yes.
780. Have you gone into the probable cost of that? No. Of course I could do it; but in order to give any information of value to the Committee, it would involve the actual preparation of sketch designs and measuring up.
781. Are the appliances in connection with the desiccating works of such a character that they could be utilised, after such remodelling, or would it be necessary to have entirely new appliances? Desiccation, like refrigeration, is improving every day. I think the Committee will find that one of the carcass butchers at Glebe Island has adopted a process which opens the door to complete reformation. I mean Mr. Elliott. I think he has attempted to convert all the waste products into cyanide of potassium. In these days of metallurgy, there is such a demand for cyanide of potassium as never existed before, and that opens the door to the doing away with the desiccation of these materials entirely. I think it is very possible that all these expensive machines and the risk of nuisance will be done away with. But I should be sorry, from this point of view: the great curse of this country is that the people will not use manures. We are taking immense quantities of crops off the land year by year, and are not returning anything to it.
782. Have you visited any of the other abattoirs? Yes; Melbourne, Hobart, Auburn Meat Preserving Company, Aberdeen, and Riverstone. I have had experience in meat-preserving works.
783. *Chairman.*] Have you ever had any experience of, or have you inspected, any of the abattoirs in the older parts of the world? No; but I have books and pamphlets relating to them, and I have also a lot of information which was gained by the Royal Commission on the "sanitary condition of Melbourne," relating to other existing abattoirs.
784. Is the report of that Commission of recent date? Yes. I have the evidence which I gave them in a printed document, which I think it will be worth the while of the Committee to read.
785. Were you summoned to give evidence before that Commission? Yes.
786. You went from this Colony to Melbourne to give evidence? No; they came here.
787. They visited New South Wales for the purpose of taking evidence? Yes.
788. And you, I conclude, were one of the principal witnesses in this Colony? Yes, as regards the abattoir question.
789. Do they, in that report, make any reference to our abattoirs, either favourable or unfavourable? Yes; they visited our abattoirs, and they said that we were far ahead of Melbourne; imperfect as we were.
790. That was their opinion in 1888? Yes; I gave my evidence in June, 1888.
791. How many members of the Commission visited Sydney? The whole of them.
792. Was that report presented to the Victorian Parliament? Yes; I will lend you the first, second, and final report of the Commission.

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TUESDAY, 1 SEPTEMBER, 1896.

Present:—

J. S. HAWTHORNE, ESQ., IN THE CHAIR.

MR. BAVISTER.

MR. WILKS.

Arthur Grey Kenway recalled and further examined:—

793. *Mr. Wilks.*] I notice that you lay great stress on the inspection before slaughtering of live stock arriving at the abattoirs? Yes.
794. Would you recommend the introduction of that system? It is there now. At present the chief inspector inspects the cattle as they arrive at the Island; but the sheep are not examined individually as they arrive.
795. Later on you laid great stress on the importance of mutton inspection—you said you thought that it ought to be as rigid as the inspection of beef? No; because in the live state it is impossible. Bullocks present advantages for inspection in a live state which sheep do not. Bullocks are larger beasts, and you can pick out an individual. You can watch their gait (method of walking), the hang of the tail, or the head, and your suspicions are aroused. The difference between inspecting large stock and small stock is that when you are dealing with cattle you can see the individual beast.
796. The general signs of disease are more apparent? Yes, because of the bulk of the animal. The eye can see any defect in the walking of the beast. To the critic, a man really exhibits all his complaints by his gait. A bullock does the same; but a sheep, being in a mob, his gait is concealed. Therefore, individual detection of disease is impossible. It is impossible to detect all diseases in a mob of sheep.
797. That is when they arrive there? Yes.
798. What do you suggest in regard to inspection of sheep in their dead state—as carcasses of meat? I think it would want an army of inspectors to achieve the object of the Board of Health.
799. And you think that an army of inspectors would be impracticable? Of course.
800. Do you suggest that there should be a greater number of inspectors there than there is at the present time? Yes.
801. How many more would you suggest would be sufficient to do the work sufficiently for all practical purposes? In designing a new abattoir the detail of the design of the abattoir would enable detailed examination. At present it is utterly impossible; but to meet the requirements of the present abattoir there should be an inspector always present in each mutton slaughter-house—never leaving it.
802. That is as it exists now, but assuming that it is on the best agricultural plan, or one you conceive to be the best, would it then also require an extra number of inspectors? Yes; more than there are at present—that is, if the Board is to condemn meat in the same sense as it does at present.
803. Speaking of condemned meat, do you consider that much diseased meat goes into the market for consumption? I am speaking as a layman, and I do think so.
804. Do you think there are any real injurious effects from the consumption of diseased meat? I do not.
805. You really think it is more sentient than anything else? Yes.
806. That doctors are not able trace any complaint contracted from it? I do not know of any case in the Australian Colonies where any disease has been proved to have been communicated to human beings through eating diseased meat.

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807. *Mr. Bavister.*] Do you exclude pork in that? Yes, except in the case of trychinosi. It has been proved in other countries, and I cannot say it is not known here; but I do not know of any case in which it has been absolutely proved to be traceable to the eating of diseased pork. The experience, however, of other countries makes us very careful in using pork.

808. *Mr. Wilks.*] Are you aware of the rigid inspection they have in Germany for the detection of trychinosi? Yes, from reading. Not as relates to trychinosi specially, but diseases generally. They have an army of fifty or more inspectors, I believe, in the Berlin Abattoirs—I do not know the exact number. Each individual beast, small or big, is examined, and is examined microscopically—not only pigs, but all beasts—and diseased meat is allowed to enter into consumption if, under the microscopical examination it is thought not to be dangerous to public health; but it is branded as diseased,

809. It is branded as diseased, and, of course, sold at a lower price? Yes.

810. Would you suggest that a similar system should be adopted here? I dare not go so far, because of my want of knowledge of diseases and their effects. I am not an expert in meat.

811. But drawing an inference from the treatment in Germany for the protection of meat consumers, would you recommend the adoption of a similar system here? I look at the matter in this light: Germany is a very old country—has been autocratically governed and bureaucratically governed—and I think that all these questions have been far better studied there than in the Colonies. I believe that the present system there is the result of experience, and I do not know that the German nation suffer from diseases through eating diseased meat more than any other nation.

812. You would not be prepared to say that we should follow in their footsteps as closely as possible? No; circumstances surrounding the trade in the Colonies prevent us from adopting continental methods. From beginning to end, there are differences which in appearance may be trifling, but which in reality are all-important.

813. It would tend, then, to enhance the price of meat to the consumer? Yes.

814. Much enhance it? Very much.

815. That would make it unpopular, to start with? Yes.

816. In glancing over your previous evidence, I notice that you seem to have given the *pros* and *cons* of the case in regard to the retention of the abattoirs at Glebe Island, and also, reasons for removing them? Yes.

817. When that evidence is boiled down, it means, practically, that you believe in having a metropolitan abattoir? Yes; that is an absolute necessity.

818. One central abattoir, or several abattoirs? A metropolitan central abattoir. Sydney is the metropolis of the Colony.

819. Where would you suggest that should be? Everything points to somewhere in the neighbourhood of Blacktown, because that is a stock centre. Of course the railways are our national means of conveyance, and so long as that exists we must get a concentration of the railway systems at one natural point—not an artificial point, but one natural point—quite apart from population; and everything points to somewhere in the neighbourhood of Blacktown.

820. How would you deal with that portion of the stock which comes coastwise? At present, after being landed in the harbour they are driven by road to Homebush. They must go through the saleyards to be inspected before being sold, and they are driven by road to Homebush, [and afterwards those that are going to the abattoirs are driven back to Glebe Island.

821. They have a double journey? Yes; after the trials and cruelties of a sea voyage.

822. What is the main objection to the abattoirs being in a populous area—are there any obnoxious smells from the abattoirs? There is large evidence that there is no necessity for smell; but experience teaches that there must be. There is a smell naturally attaching to the killing of even only one beast. Supposing that a beast were being slaughtered in this room, anyone not accustomed to it would not like to be in the room at the same time. It is the same in yarding stock. Any yard will smell, no matter how perfect you may keep it. I am not alluding to pigs, but to sheep or cattle. There is a certain amount of smell. Those are unanswerably sound objections. But on the top of that there is public prejudice. The very neighbourhood of such an objectionable industry will always arouse public outcry against an abattoir in the neighbourhood of populated districts.

823. Well, have you heard of any public outcry against the existence of the present abattoirs? Yes.

824. In the immediate neighbourhood? From portions of Balmain, but not the bulk of Balmain; and from Leichhardt, Glebe Point, and Pyrmont, there have been complaints.

825. Glebe Point? Yes. I am confining myself now to the existence of abattoirs, not the driving of stock.

826. Then you speak about the area of 30 acres as the probable area that would be required? I think I speak of 50 acres as the area that might possibly be acquired, by taking White Bay, and levelling the Island.

827. But you speak of a model abattoir, and say 30 acres would be sufficient? Yes, for slaughtering accommodation, and the yards attached. At Glebe Island there are 30 acres, more or less, as it exists. A large portion of it is unavailable, owing to its roughness of contour; but if it were levelled and White Bay were included in the abattoirs, I roughly estimate that you could get an area of 50 acres.

828. That is 20 acres more than would be required for a model abattoir? Yes.

829. Would this model abattoir provide yarding accommodation? It would allow for very cramped saleyards, and for abattoir purposes.

830. In regard to the desiccating plant, you were manager there, were you not? I was superintendent of the desiccating works.

831. Would you mind giving us an opinion in regard to the desiccating plant? If it were repaired it could be made to meet all present requirements.

832. It would require, not a new installation, but simply repairing? Yes.

833. From your experience in the desiccating-works, do you consider that they treated more matter than they should have treated, owing to the extra amount of flushing with water? Yes; that is what prevented the desiccating-works from paying.

834. The main obstacle to their paying was the useless amount of water they treated? Yes.

835. What would you suggest to get over that difficulty? Further expenditure might, perhaps, be inadvisable in an effete establishment; but if the blood were by some means conveyed to the desiccating-works, separated from the water, then the present desiccating-works would pay handsomely. 836

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836. The by-products would pay handsomely? Yes; without any new machinery.

837. Conveying the blood to a common receptacle, after the Chicago principle? Owing to the defective design of the Abattoir, I had to find a remedy, and that was to form a sump under each slaughtering floor—a cast-iron cell, really—into which, after the animals were bled, the blood could be swept with a broom—an imperfect method certainly, but a practical one. I designed it, and the drawings are in the hands of the Board of Health. By pulling up a line, you would turn on the compressed air, and the joint would be made, and the clotted or liquid blood—it would not matter which—would be blown down direct into the desiccating-works. Then we could have dealt with the blood in its pure state. Not only could we have dealt with it at less than half the cost, but it would have brought double the price; because it would have been a pure marketable article. The present machinery would have quite met all that; but, owing to the imperfect design, the blood had to be carried through the drain with so much water as to make it, after being carried through that drain, in a very imperfect form. Having been once mixed with that water, it had to be separated, and to separate it we had to heat all that water—between 30,000 and 40,000 gallons per day—and then even when coagulated from that water, we not only lost a great deal by any methods we might adopt for catching and straining the coagulated blood, but even after pressing in an hydraulic press the pressed blood would contain 20 per cent. more moisture than the natural blood contained; therefore, there was all the expense of getting rid of that water by desiccation—the consumption of coal and the labour attached. If we could get the blood down to the desiccating-works, as they stand, in a pure state, the staff could be reduced by very nearly half, and the staff is really the bulk of the expense.

838. Would it necessitate the carrying out of a costly scheme to effect what you have spoken of? I did not go so far as to make out an estimate of the cost.

839. Could you not give a rough estimate now? No, not with any safety.

840. Still, all you have said would warrant a good expenditure? It would warrant it, if the place is to stand; but it would not warrant it as a temporary measure. It would require an air-compressing machine, and slight alterations to every house.

841. Then, assuming that the Abattoirs were to remain where they now are, the greatest recommendation you could make would be to perfect the desiccating-plant? No, for this reason: The whole of the roofs, from beginning to end, will soon tumble down. No private occupier would be allowed to let people live in such places. Of course people do not do so at the Abattoirs; but, I am illustrating the dilapidated condition of the Abattoirs. All the roofs are sagged, and because of the work of rats and white ant, are rotten.

842. An altogether new structure would be required? Yes.

843. Would that involve a heavy expenditure? I prepared an estimate when Mr. McMillan was Treasurer. Mr. McMillan was the Minister who took the most interest in the Abattoir question, and who paid the most visits to the Island, inquiring into every detail. I think I forced his hand, because I asked for £60,000. To justify myself, I gave him a detailed estimate and explanation of each repair required. He was not satisfied, and he came and personally entered into each detail of my estimate. He went thoroughly into everything that I was asking for. He did not in any sense imply that I was asking for too much. He did not tell me that it was impossible to supply the money; but I presume that that was the reason why he did not do anything. Judging from what he said to public deputations that waited upon him, I think he realised that the time had come when the question of shifting the Abattoirs to some other site, or continuing them at their present site, was of so much importance that it meant really not spending any more money on the Abattoirs as they now stand. I think Mr. McMillan would be one of your most valuable witnesses if he could be called.

844. Then the conclusion that you drew was, that Mr. McMillan did not feel warranted in incurring that large expenditure of money? He felt warranted, but I do not think he had power to get it.

845. Does the liquid refuse pour into the harbour? All the surface drainage does.

846. Do you think that that has a tendency to discolour the harbour around there? Only locally at the mouth of the drains, but of course it contaminates the water.

847. Do you think it does, to any large extent, in that bay? Not to anything like such an extent as the sewer discharge at Blackwattle Bay does.

848. For instance, we have water discoloured very much at Peacock's Point, the furthest eastern point of Balmain? I do not know Peacock's Point; but I suppose you mean that red chocolate colour. That is not contamination by sewage or organic matter in any sense or form. It is caused by animalculæ; I was the first to discover it. Being always accused of discharging blood into the harbour, my attention was drawn to it, and I discovered it was caused by animalculæ, and I was afterwards supported in my opinion by Mr. Hamlet, the Government analyst. But that same discolouration was evidenced at Manly, Garden Island, Circular Quay, Darling Harbour, White Bay, Rozelle Bay, right round Long Bay, and then as far as Gladesville.

849. I am not speaking of eight or nine years ago; I am speaking of local discolouration that exists in that bay only? Blood will not discolour salt water for more than an hour.

850. You have not been aware of any local discolouration? No, not the red colour.

851. I can assure you there has been in that bay marked discolouration? Not within my time.

852. In that bay within the last twelve months? Blood will not retain its colour in salt water more than three or four hours.

853. Then you are satisfied that there are no injurious properties at all flowing into the harbour? I do not say that. I am sure there are.

854. You are certain there are injurious properties flowing into the harbour? Yes.

855. Could that be prevented? Yes.

856. What system would you adopt to prevent it—that is assuming the Abattoirs remained at Glebe Island? I presume you mean now that the desiccating works are closed.

857. Is it owing to the desiccating-works being closed? I would naturally assume it is. I have carefully kept away from the place; but I know from past experience that it is impossible to convey all the blood and offal to sea without having between eight and eleven trips of the punt per week. I know that from the time when we were overhauling our machinery at the desiccating-works, and had to stop. It was an evil I could not get over, because the Government would not duplicate my plant, and at periods we had to stop, and I took every precaution, regardless of expense—that is one reason of my downfall—to prevent nuisance,

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nuisance, and it did require from eight to eleven trips of the punt per week to convey all the blood and offal to sea—not the surface drainage.

858. Not from the cleansing process? Well, it did include the cleansing of the floors while slaughtering operations were being carried on. But when those operations had ceased, and the floors were given a final cleaning, even when the desiccating-works were running, we allowed that to go into the punt, and conveyed it to sea. Sometimes we allowed it to enter the harbour, when forced by circumstances.

859. How many journeys do they make now? I have heard, two or three a week.

860. You consider that owing to the stoppage of the desiccating-plant, and the want of a proper service to carry this matter out to sea, it surreptitiously finds its way into the harbour? It must find its way into the harbour. I do not say surreptitiously; but it must go into the harbour.

861. And that must be injurious to people residing on the foreshores? Certainly. It is contaminating the harbour still further. But there is this other side of the question. The sewer running into Blackwattle Bay, which drains a very large proportion of the town, is continuously running, but because it does not contain anything which discolours the harbour the public put up with it. In prevailing north-easterly winds all that drainage, or a large portion of it, is blown out into Roselle Bay and Johnstone's Bay, and lies there on the mud flats. No doubt the discharge from the island would very greatly increase the evil, but you cannot say that the Abattoirs are the only creator of nuisance. There is the other staring you in the face all the time.

862. Then you consider the Blackwattle Swamp is as great a nuisance, if not greater, than the present Abattoirs? Yes.

863. Assuming they are conducted loosely? Yes.

864. And the people residing at Glebe Point and surrounding districts have more to complain about from Blackwattle Bay sewer than they have from Glebe Island? Than they had from Glebe Island.

865. Than they would have from well-conducted Abattoirs there? Yes.

866. And they are accusing the Island of what Blackwattle Swamp is the main cause of? Yes.

867. In regard to the management of the Abattoirs, would you suggest private enterprise should run them, or municipal control, or the present State control? I have in my report, I think, measured the thing pretty closely. I do not think that private enterprise would spend sufficient capital to carry it out in a proper manner. I should like to see it under private enterprise if carried out properly. But I do not think that private enterprise would be prepared to spend sufficient capital to establish a proper Abattoir, and I am sure that no municipality would. We know that by proof afforded by existing circumstances in Victoria.

868. Would you mind giving that proof? The proof is given in the report of the Royal Commission on "the sanitary condition of Melbourne." You find the question summarised there, as to the effect of municipalities governing Abattoirs. That recommendation is one of the main things on which I based my papers. The Commission made very wide inquiries. They speak, first, of the city Abattoirs—that is Flemington—which they condemn. They say—

We are of opinion—

That it has not been possible, by direct evidence, either to prove or disprove that any injury to the health of the inhabitants of the metropolis is caused by the City Abattoirs as now existing.

That inconvenience arises from the driving of cattle.

That the site of the Abattoirs and the adjacent part of the accommodation-paddocks are much more low lying than is desirable.

869. But what about municipalities having charge of the Abattoirs—that is what I am dealing with particularly? These are the recommendations of the Commission.—

Finally, after deliberately weighing all the facts and arguments before us, we recommend that the metropolitan Abattoirs may be retained on the present site, provided—

That the site, buildings, and management of the Abattoirs and of the sale-yards of stock be transferred from the Council of the City of Melbourne to the Metropolitan Board of Works.

870. Taken from the council and transferred to a direct government department? Yes. At page 7 of their final report the Royal Commission say:—

Accordingly we recommended that the abattoirs then existing at South Melbourne, Port Melbourne, Collingwood, and Footscray be immediately abolished; that notice be given to the owners or occupiers of the remaining suburban abattoirs that, unless within twelve months they make their establishments conform with the code of rules prescribed by us, their establishments will be closed.

As regards the main Abattoirs—the Melbourne city abattoirs—the Commission recommended:—

To transfer the site, buildings, and management to a metropolitan Board of Works, under whose control the whole should be brought into accord with our code of rules—the city council receiving compensation for the buildings and improvements; or failing this

To resume the site of the cattle sale-yards and abattoirs.

You were asking about private enterprise. The Commission in their report say:—

We recommend that, in order to encourage the establishment by private enterprise of such trade for Victoria, (that is the chilled-meat trade)

the Railway Department should construct suitable trucks, run special meat-trains, and charge the minimum paying freight, and the cold-storage and chilling-rooms should be erected in connection with the metropolitan railway terminus.

They recommended the encouragement of private enterprise in that matter.

While, therefore, we fully appreciated the advantages which would accrue from the development of a system of country killed meat supply, we stated that in our opinion an abattoir would, in any circumstances, be required in or near the metropolis. A code of rules was accordingly drafted which should be observed in the construction and management of abattoirs. The existing city and suburban establishments were then tested by this code, and were found faulty in various degrees. In our first progress report, a full statement will be found of the evils which then existed. As a rule, the sites were bad; the arrangements for the approach and keeping of stock for slaughter were defective, and the accommodation insufficient; the drainage and the mode of disposal of offal were most unsatisfactory, and general cleanliness was imperfect or neglected. We concluded that the condition of the abattoirs then existing gave rise to nuisances, which, in some instances, were of great intensity; that much pollution of rivers was produced; and that these evil conditions must involve danger to health, directly or indirectly.

That reminds me that the Melbourne Abattoirs' desiccating process has been brought up repeatedly as an example for us to follow, and they have the "Farmer" machine. That is well and good. They put only the clotted blood in. All the liquid blood is simply allowed to run away into the Saltwater River. If we did

did that at Glebe Island the public would be up in arms immediately; in fact we were accused time after time of doing it. But we boiled the whole lot, and separated what blood it was possible to separate under those conditions. We have had people in boats from residences at Glebe Point to watch what we were discharging, but they did not know where to look. If they had looked at the surface drainage in wet weather—the drainage from the yards which still exists—they would have found that there is the real nuisance from the Island, even if desiccating works are progressing. If they are stopped, of course additional nuisance is added. You will see from the report of the Royal Commission that, in their opinion, the carrying on of abattoir business by municipalities has proved to be a failure.

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871. In their opinion and experience? Yes; their opinion and experience.

872. And has now reverted to a Government Department? Well, they recommended it. I do not think it has in all cases. I should like to say that the conveyance to sea of the blood and offal is not curing a nuisance, but creating one.

873. In what way? All the refuse, in favourable winds, is blown back on the beaches of Manly, Bondi, and Coogee, and that was one of the causes of the establishment of the desiccating works. They are reverting to the old system which the establishment of the desiccating works was meant to avoid.

874. *Chairman.*] I think that in this report of yours you state that the inspection at the Island is not good? I do not say that; it is not good in all senses. I do not blame the inspectors for not doing their duty, but I say the inspection is insufficient.

875. Your complaint is that the inspectors at Glebe Island are too few? Yes.

876. During your time there as superintendent of the Abattoirs you suggested an increase in the number of inspectors, I think, from two to five? Yes.

877. And you think that, owing to the way trade is done at the Island, and the large increase in the trade done there year after year, a larger number of inspectors is required even now than you suggested? Yes; I should like to remark that when I recommended an increase to five, I then informed the Government that to fulfil all the requirements an army of fifty inspectors was necessary, to enable individual inspection of beasts. I protected myself in that way.

878. But do you think it is at all reasonable to suppose the Government would recommend the appointment of such a large staff of inspectors as fifty? No, I do not think it is reasonable at all; but the history of the Abattoirs from beginning to end shows that the public accuse the Abattoirs officials of not examining each individual beast, and I took the ground that that was not possible unless we had an army of fifty inspectors. I do not think it is necessary.

879. Do you think that the percentage of diseased animals that are detected at Glebe Island is sufficiently large to warrant a large increase in the number of inspectors;—do you not think that it would be possible for the present staff of inspectors, by continually moving from one slaughter-house to another, to meet all the requirements and to detect disease in any of the beasts or sheep slaughtered at the Island? Not amongst the small stock.

880. Are diseases in sheep of a varied character? I cannot give you an opinion on that—I am not an expert.

881. Who is the Government veterinarian at the Island? There is no resident veterinarian there. Mr. Stanley is the only Government veterinarian, and the only officer who holds a diploma.

882. The present veterinarian has complete control of the whole inspecting staff? Yes.

883. And he it is who directs any discretion used in passing or condemning meat killed at the Island? Yes. I should like to modify that answer by saying that the same inspectors are armed with the written authority of the Board of Health to individually condemn. They do not act on it, but they have the power.

884. I understand, then, that each of the five inspectors is armed with sufficient authority to condemn any animal that may be brought on to the Island for slaughtering purposes? Yes, on his own responsibility.

885. A carcass butcher, or any other person who brings an animal there to be killed, has a right to appeal, if he thinks that an inspector is wrong in his diagnosis of the case? Exactly.

886. The appeal, I understand, is not to the chief inspector of the Island, but to the veterinary surgeon employed by the Government? Yes.

887. Do appeals frequently take place? No.

888. Very infrequently? Yes, very infrequently.

889. Were many appeals made during your term of superintendentship? Before the Board of Health took control there were a few appeals. I do not remember how many.

890. And when the appeals were made, were they, as a rule, successful or otherwise? They all failed. Mr. Shelley's decision was upheld by Mr. Stanley.

891. Was that the mode of appeal—first to the chief inspector? They appealed from the decision of the chief inspector.

892. Is Mr. Shelley chief inspector at the Island? Yes. They appealed from his decision to the Government veterinarian. In the early times the Government veterinarian was independent of the Abattoir Department—he was under a different department.

893. Did I understand you just now to say that any of the five ordinary inspectors could condemn cattle on his own responsibility? They are each empowered to do so.

894. Then, if a person disagrees with an inspector's decision, that person appeals to the chief inspector? No. Although the inspectors are empowered to condemn, for departmental reasons and discipline they are not allowed to condemn. It is only Mr. Shelley, or in his absence the assistant inspector, who actually condemns. I am simply speaking of the Board of Health empowering them.

895. But supposing (say) Mr. Brown, an inspector at the Island, condemns Mr. Smith's cattle, sheep, or pigs, or any other animal that has just been slaughtered, has Mr. Smith to appeal to Mr. Shelley in the first instance, if he is dissatisfied with the decision of the ordinary inspector, or to the Government veterinary surgeon? No; because every inspector, being a subordinate inspector, reports the matter to his superior, Mr. Shelley; therefore an appeal does not arise.

896. If the ordinary inspector notices an animal just killed which he considers to be diseased, or that it is necessary to diagnose carefully, does he at once go and seek the services of the chief inspector? Yes; or, failing his presence, the assistant inspector, Mr. Alfred Norton.

897. What kind of man do you consider the assistant inspector;—is he a man who thoroughly understands his duty? As far as I am aware, I think he is very nearly as capable as Mr. Shelley himself.

898. I think that, before going to the Island, he had a large experience in the retail trade? Yes; I think he knows his business.

A.G. Conway. 899. Your opinion, and the opinion of the carcass butchers and the retail butchers, is that the assistant inspector, Mr. Norton, is quite as capable of discovering disease in animals as the chief inspector? I cannot say that much, quite. Mr. Shelley has an exceptional gift for detecting diseases in living cattle—I do not say sheep.

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900. Then your opinion of the chief inspector is that he is a particularly clever officer at the work at which he is engaged? Not altogether, but in that particular branch—in detecting diseases.

901. In your report you state—

In the case of the present chief inspector these remarks do not apply. His special aptitude in detecting the disease in living stock, as well as identifying it in the dead carcass, is not likely to be possessed by a veterinarian who has not been brought up from childhood amongst stock, but, again, it is not always that a gentleman of such stock experience can be found, who has also made diseases such a special study, except beyond what is necessary to his business as a stock raiser.

902. You pay the chief inspector rather a high compliment in the report you have furnished to the Committee? In that particular direction, and I stick to that. I know that is a fact.

903. That, as a judge of disease in living stock, he stands, in your judgment, almost unequalled in the Colony? Oh no—but unequalled on the Island.

904. So you think, I suppose, that his knowledge entitles him, when he condemns an animal, to have his verdict listened to almost without appeal? No. The Board of Health themselves condemned Mr. Shelley before they took control. The Board of Health attacked Mr. Shelley as condemning beasts on a wrong basis, and when I defended him they said that Mr. Shelley displayed his ignorance by the explanations that he made, and that he was not fit to control the Abattoirs. Putting these two things together—my recommendation of Mr. Shelley and the Board of Health's condemnation of Mr. Shelley—you can see how necessary it is for a common sense view to be taken. I do not say that Mr. Shelley was wrong in his diagnosing of diseases and his method of condemning.

905. It is very likely that the Board of Health stated that Mr. Shelley was unfit to control the Abattoirs? It was within two years of the Board of Health taking control of the Abattoirs.

906. But the Board of Health took no steps to have him removed from his present position? No; I beat them with the common sense expression of my views in support of an officer who in that direction was doing his duty.

907. What position did Mr. Shelley occupy at the Island when you were superintendent? Chief Inspector. My office was simply abolished.

908. So that Mr. Shelley worked with you for some years? Yes, four or five years.

909. I think you stated that it would be impossible for even a skilled man, like Mr. Shelley, or one of the inspectors, to discover diseases at all times in beasts without the aid of a microscope? Yes.

910. So you think it is necessary always that a duly qualified inspector should be armed with a microscope for the purpose of thoroughly diagnosing the animals slaughtered at the Island? I should like to explain the reason why, because the question does not convey the whole meaning. In my report I dwell on the wholesale condemnation of meat. This wholesale condemnation is consequent upon fear of allowing diseased meat to enter into consumption. I maintain that the proper way of condemning meat is either to pass or to condemn with utter confidence. Why should the stock producers suffer because you fear it to pass. At present the inspectors are guided only by locating diseases in certain organs of the body. They do not examine the meat itself. They say "from experience we know disease must be disseminated through the meat"; but they do not prove whether it is or is not disseminated, and I do think that it is a matter of national importance, that before condemnation takes place the dissemination of the disease through the meat should be proved.

911. But would not that entail almost a consultation not only with the inspectors at the Island, but also with leading medical men? No. A pocket microscope will display disease. I am speaking, still, as a layman, and from what I have read of the system in Berlin. A pocket microscope will display disease in the meat if it is there, and I do think an inspector is not properly armed unless he is armed with a microscope.

912. You think it is quite possible for an animal at the Island, after being slaughtered, to be diseased and to pass by undetected, if the inspector has to depend only on his natural sight? Yes, because if a journeyman butcher wants to gain the good will of his master, all his instinct is to conceal any organ taken out of the inside and slip it on one side so that it shall escape the inspector's notice, he knowing the inspector cannot discern the disease in the meat.

913. Then, any of the journeyman butchers at the Island, if they wished to get into special favour with their masters, are at liberty and are able to extract the diseased portions of an animal and throw them on one side before the inspector comes along to inspect? Yes, and they will do it even in the presence of an inspector—that is, with small stock—and if a slaughterman did not do it, he would be dismissed by his employer.

914. So that there is really a dread on the part of the journeyman butcher of his employer, if the inspector comes along and finds a diseased bullock, or a diseased sheep, or a diseased pig, as the case may be? Yes. I would suggest, with all due respect, that the officers of the Journeymen Butchers' Union should be asked some questions of this nature, and they will be able to tell you better than I can.

915. So that really your experience of the Island trade is, that the men themselves are doing their best to try to prevent the detection of disease in the animals killed at the Island, on account of fear of their masters finding fault with them for not throwing away the diseased portions when they see them, before the arrival of the inspector? I would not like to say as much as that; but it is a necessity of their making their living that they do conceal, and it is a necessity of their getting not the good favour but ordinary dealing from their masters that they do conceal.

916. But could not that difficulty be got over by the inspector insisting upon every portion of the animal being left intact until after his inspection, and he had passed it, or put the Government brand on the slaughtered animal? You could do that only on the beef side, amongst the large beasts. It is impossible with the small stock. They kill thirty or forty sheep at a time—in a fall—and there may be eight or ten men in a room not so big as this—there may be thirteen men slaughtering and cleaning sheep.

917. How many sheep slaughter-houses are there at the Island? Six, sometimes seven.

918. Therefore there are sometimes between seventy and eighty men, in a busy season, employed in those different slaughter-houses? Yes. The thirteen men do not all kill at one time; but you can see generally from nine to thirteen men, and perhaps more, killing in these small pens, 18 x 12. 919.

919. So we may say that fifty or sixty men are killing continually in the sheep-houses, and dressing sheep? *A. G. Kenway.*  
Yes.

920. And there are only five inspectors to watch those fifty or sixty men as well as to pay attention to the bullocks killed on the other side of the way, and also the pigs and calves and other stock slaughtered at the Island? Yes. I go further than that. I would say that the inspectors pay only periodical visits to the mutton side. They trust to the hardships of the journey to weed out diseased sheep. The large stock and pigs and calves are most carefully examined by the inspectors, to the best of their ability, with their knowledge; but the mutton is left, I will not say to the casual, but to the intermittent visits of the inspectors to the mutton-houses.

921. So it is more like chance than otherwise if diseased sheep are found? Exactly.

922. From that I suppose we may infer that a considerable amount of diseased mutton finds its way into the different butchers' shops in the city and suburbs? I have been informed positively, but confidentially, that it is so, by a man who should know—that is Rabbi Phillipstein.

923. Why is it you bring in the Rabbi to testify to what you say about diseased meat? He is independent of all carcass butchers.

924. In what way independent? He is not employed by them. He is independent of the carcass butchers in the method of earning his living, and he can speak.

925. And what experience does he have in the slaughtering of sheep? He told me that not a few, but of great many diseased sheep, go into consumption. In fact he warned me several times—went out his way.

926. How does he come to take such an interest in the matter of sheep-killing—Jewish residents, I suppose, do a large business? No, comparatively small.

927. How did he come to go out of his way to give you information in regard to the killing of sheep? I used to consult with him, and he used to consult with me. He is a very gentlemanly man. I used to do my best to forward his business. He has had difficulties to overcome in carrying out his peculiar methods of slaughtering, and he responded by giving me information, not as to the individual action of anyone on the Island but as to the methods.

928. Have the Jews a special house in which their meat is killed? No. They limit their patronage to two or three who kill under contract, or at so much a head.

929. So I am to understand from you that the only strict inspection that takes place at Glebe Island by the inspectors appointed by the Government is in regard to the cattle? Cattle, calves, and pigs.

930. But the sheep are only inspected periodically, and there is a considerable amount of chance as to whether diseased sheep will find their way into the city and suburban markets or not? It is displayed by the figures which I quoted.

931. So the figures which you have quoted, showing the small number of sheep condemned, as compared with cattle, evinces that a considerable amount of neglect prevails in regard to the inspection of mutton at the Island? Not neglect, but I should say laxity. I do not say that the inspectors neglect their duty.

932. We are not to infer that you find fault with the inspectorial staff, but more with the fewness of the inspectors to do such a large amount of work? Yes.

933. You really think that in the interests of the health of the public, and to warrant the supply of sound meat all round to the public, an increase in the number of inspectors should take place at Glebe Island? That is, if the present method of condemnation is to be persisted in.

934. You feel confident that meat is very often branded as diseased, and that the peculiar disease of the animal is not sufficiently serious as to warrant its being cast aside as unfit for human food? I say so, not on my own judgment, but upon the systems that are in existence in other countries. It is not a personal opinion of my own.

935. *Mr. Wilks.*] You do not attach much importance to the inspection of meat? Yes, I do. I think it should be largely increased, so as to gain discretionary power as to what to condemn and what to pass.

TUESDAY, 15 SEPTEMBER, 1896.

Present:—

MR. LAW,		MR. MAHONY,
MR. O'SULLIVAN,		MR. WILKS.

J. S. HAWTHORNE, ESQ., IN THE CHAIR.

Arthur Grey Kenway recalled and further examined:—

936. *Mr. Mahoney.*] As you are doubtless aware, some gentlemen interested in the trade have already given evidence before this Committee? I am in ignorance of what they said. *A. G. Kenway.*

937. In giving your reasons as to why the Abattoirs should be removed from Glebe Island, you used the phrase, "Even the carcass butchers and shop butchers are not unanimous in desiring its continuance"? That is from my present experience. *15 Sept., 1896.*

938. Can you give us the names of some carcass butchers who are in favour of its removal? Yes; Macnamara and Elliott are, I believe, both in favour of it, or they were in my time. It is, of course, a considerable time—nearly two years—since I had any connection with them, and they may have altered their opinion since then.

939. But two years ago, when they gave that opinion, they were old hands on the Island? Yes.

940. Mr. Henry Macnamara is one of the oldest hands on the Island? Yes; and carries on the largest business. Macnamara and Elliott would like the Abattoir to stay where it is, or to have an opportunity of establishing abattoirs of their own.

941. That is what you might call a selfish motive? Exactly. That reminds me of a point in my evidence which I did not bring out sufficiently. I allude to the importance of allowing private enterprise scope. The thing that prevents the encouragement of private enterprise is the danger of the creation of monopoly. Directly the establishment through which the food supply of the metropolis passes into the hands

A. G. Kenway. hands of private capitalists monopoly is immediately created: I did not bring that point out strongly enough in giving my reasons for the conclusions to which I have come—I mean the danger of monopoly arising directly private enterprise grasps the Abattoirs. From a sanitary standpoint there is no reason why private enterprise should not do it.

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942. That would mean, then, that if Macnamara and Elliott are only in favour of the removal of the Abattoirs, to give them an opportunity of establishing private abattoirs, you think that would tend in the direction of creating that monopoly? Yes.

943. Can you give us the names of any carcass butchers who, apart from any selfish reason, are in favour of the removal of the Abattoirs? Men who were of importance in my time have ceased to be since—for instance, there was Mr. Tancred.

944. Mr. Tancred, who is now out of business, was during your time in favour of the removal of the Abattoirs? I think so, rather than continue under the conditions under which they had to work at the present Abattoirs. I think Woolf would express a modified wish in the same direction.

945. On what ground would Woolf give it? Because he cannot compete fairly in the business. Woolf is an important man, especially in the pork line.

946. Is he a carcass butcher as well as a retail butcher in the pork line? Yes.

947. Well, taking Mr. Woolf's case, his reason for wishing the Abattoirs to be removed would be on account of the competition to which he is subjected? I think so. It is dangerous for me perhaps to attribute motives or wishes to others, but that is my inference from conversations.

948. Is there anybody else you can think of? Symes and Agnew, I think, would like to see the Abattoirs removed to a better place—more convenient.

949. Why is it inconvenient for Symes and Agnew? They are so cramped in the slaughter-houses, and cannot treat their stock properly. They have complained frequently that they lose their stock.

950. Does that mean that the Island itself is not big enough, or that the buildings on that site are cramped? It means all and every one of those points—imperfect design, the condition of the stock on arrival, and its insecurity while in that position.

951. The term "want of room" refers to the whole site whether built on or not? It does, but more especially to the slaughter-houses.

952. Is there anybody else? I am not sure about O'Brien and Roberts. That is another important firm in mutton. They all cry out for want of space: but it is not all who have expressed an opinion to me about their removal. I being a Government officer, and necessarily avoiding all those debatable questions which have arisen from time to time, I have not solicited opinions from any one of them. What opinions I have had given to me have been forced on me.

953. I suppose that they would meet you and conversationally would express an opinion? Yes.

954. That complaint of want of space is a general complaint amongst carcass butchers who are in favour of the removal or the retention of the Abattoirs? It is the universal complaint.

955. Is that a complaint that could be cured on that site? It could be partially but not totally cured.

956. Is there anybody else in the carcass line you can think of? Those who are mostly in favour of the removal of the Abattoirs, especially Macnamara and Elliott, are in favour of it because they want to get scope for private enterprise.

957. Are many of the shop butchers in favour of the removal? Many retail butchers have expressed the opinion that it is desirable to remove the Abattoirs in consequence of the condition of the meat which they are forced to buy there. It is killed in a highly fevered condition owing to the hardships of the journey.

958. What journey is that? From the pasture to the saleyards, and from the saleyards to the Abattoirs. Those retail butchers who have bought at the Darling Harbour Meat Markets, or at Richards's Riverstone Meat Depot, also near Darling Harbour, speak of meat that is killed near the natural pastures as being of very much better quality than that killed at the Abattoirs. You also get opposite opinions.

959. But is that a consensus of the opinions of those members of the retail trade who are of any importance? As far as I am personally able to judge it is so.

960. That means, practically, I suppose, that the meat killed so much farther away, and brought down in cars or trucks is very much more fit for human food? Exactly. It is proved by the trade. I understand that the Abattoir trade since I left has diminished enormously.

961. Is that falling off on account of the competition of the country killed meat? Yes, largely so, especially during the cold weather.

962. I suppose that that condition of the meat is at any rate one of your reasons for favouring the removal of the Abattoirs? Yes; I have recommended the Abattoirs to be brought to the nearest stock centre so as to diminish the amount of hardship inflicted on the stock during its journey to the Abattoirs, and also to give it resting time before being slaughtered.

963. Any suggestion, then, as to a railway over or near the present driving route would not aid in getting over the difficulty much? It would get rid of the driving through the suburbs.

964. But it would not, in any appreciable degree, get rid of that condition of the meat? No, unless the sale-yards were fixed at the Island instead of being at Homebush. Then a very large improvement would be made, but not all the improvement that is desirable.

965. Would there be room for that at the Island? If the Island were levelled and the filled-in space resumed for sale-yard purposes, with an area of about 50 acres, a large percentage of the requirements of an Abattoir and sale-yard would be met, but not all.

966. What would not be met? There would be no resting for the stock. They would have to be killed in their fevered condition as at present.

967. The construction of a railway over the present driving-route would not mitigate the evil of over-driven meat? No; it would not. Neither would it isolate the Abattoir from surrounding populated neighbourhood.

968. No, I suppose the increasing of the size of it would bring the surrounding neighbourhood so much nearer to those portions that are resumed? Yes.

969. I suppose that as a matter of fact, if the Government attempted to establish an Abattoir, even upon the very best lines, in a locality at all within reach of population, it would send up the value of the property there? It would not send it up, but it would not necessarily be a nuisance. I think it is quite possible with perfect appliances to have an Abattoir in the heart of a city.

970. The remark about depreciation of the value of property in your report refers to Homebush principally? Yes. A. G. Kenway.

971. Then I cannot quite reconcile that with this other statement of yours. In giving "further reasons for retaining the Abattoir at Glebe Island," you say, "Its removal will cause incalculable ruin to the many workmen engaged at the Abattoir who have put all their savings into the purchase of land and erection of homes for themselves and their families";—supposing that what you stated there were a matter of fact, that would only be a sentimental reason, would it not? No; if the Abattoir were removed the men would have to move, and they would have to sell their property in any way they could. They must follow their work. 15 Sept., 1896.

972. That means that those men have bought and paid for the places they live in? Many of them have.

973. They have got their own little homes there? Yes.

974. What would prevent their letting their houses when they went away? The Abattoir employs so many men, and it would mean such an exodus from Balmain that they would not get anything like a fair rent for their houses. It would be a sudden movement. It would be a terrible blow.

975. But do you not think that if the Abattoirs were removed the houses in the locality would, as a whole, really let better? No; because it is already built on with houses that would no longer be required.

976. How do you mean "be required"? Because that kind of inhabitant would not be there so numerously. If the land were unoccupied, and the Abattoirs removed, that unoccupied land would increase in value, because a better class of houses would be put upon it.

977. So I suppose they are what you would call workmen's houses? Yes.

978. What is good enough for one man in that line is good enough for another, is it not? I doubt it, for the Abattoir workmen form a very large percentage of the population of that part of Balmain. If there were a general exodus the value of the whole of the property would be depreciated.

979. Is it such a very large proportion? It is not ascertainable. Of course, no census has been taken to give you the information.

980. Are they men who work at the Abattoirs, or who sell stuff in connection with it? Both—directly and indirectly connected with it.

981. All that general work which arises from the conduct of an abattoir? Yes.

982. But I do not quite understand, if an abattoir being put in a populated locality depreciates the value of property, why its removal should depreciate it, although it involves an exodus of a number of people who live there in consequence of the work? Because the class of houses that are already erected fixes that land to that particular use.

983. But does not a man of one occupation live in a house similar to that occupied by a man of another occupation whose means are similar in amount? The working classes who have to reach Sydney or other parts would not, when the Abattoir ceased working, live in the houses which were built for convenience and accessibility to the Abattoir.

984. But is not that part of Balmain just as accessible as (say) Waterloo or Leichhardt? Yes; but I think it is the nature of all these suburbs to have a local growth.

985. Do you not think that the reason why Leichhardt, for instance, has grown has been because of the land being accessible to the working men on account of its cheapness? Not more than Waterloo and Balmain.

986. Waterloo and Balmain, too, I should say;—do you not think that is the reason? Cheapness of the land was, I think, the primary reason, more than its accessibility.

987. What I do not follow you in is—why the removal of the Abattoirs and the exodus of these people should prevent the houses from being occupied by others in the natural course of events? I speak from experience. At the present time I cannot let my house at Croydon.

988. But that is not a workman's house? No, but it is equally accessible to business men as it was in the past. I used to let it at 35s. a week, but now I cannot get £1 a week for it. That is because of the exodus and want of money, too.

989. What exodus has there been from Croydon? People, for economy sake, have to go nearer their work, and live in Sydney instead of the suburbs.

990. Would not that help to populate that part of Balmain vacated by the abattoir men? Yes; but that would not increase the value of the property in Balmain. People who have less money go in for saving money.

991. I cannot quite follow you as to why the exodus of those men should cause a whole district of cottages to remain vacant in a place so accessible to Sydney as Balmain is—more accessible than Lilyfield, and quite as accessible as Leichhardt? I can only speak on these general reasons.

992. Your opinion is that an exodus of the abattoir men leaving those cottages vacant, no one else would occupy them? I do not say that. In time no doubt they would become reoccupied; but it would not increase the value of the property—it must necessarily decrease it for a time at least.

993. That does not mean that those working men would lose their houses, but it means that for a little time there would be a chance of the property remaining vacant in consequence of the change;—is that it? I am not speaking of positive facts, but only as a matter of opinion, and I am strongly of opinion that the bulk of those who had to shift would lose their properties.

994. How lose them? Most of them have not paid up fully, and they would have to rent other houses, and they could not meet both liabilities.

995. And so, when you use the phrase "its removal will cause incalculable ruin," you apply that to those workmen who have purchased their properties on time-payment contracts or Building Societies' terms, and have not paid for them? Yes; and you must not forget the small people who have established the business there to supply the wants of those people.

996. You say that that phrase refers chiefly to workmen who have only partially paid for their dwellings? It would affect them mostly.

997. Are there properties over there other than these workmen's houses which the continuances of the Abattoirs at Glebe Island keeps down in value—I mean better class properties? I am not aware that it does, because what population has come there has already accommodated itself to the Abattoir being there. You cannot call it one of the best or most fashionable parts of Balmain. You must go away from the Abattoir district to reach that.

998. That is to say, the reason that would apply to starting abattoirs in a place like Homebush would not apply *vice versa* to Balmain? No.

- A.G. Kenway. 999. *Mr. Law.*] You said that Mr. Tancred desired the removal of the Abattoirs? Yes.
1000. Do you remember anything distinctly in regard to him that would make you come to that conclusion? The difficulties under which they work at the Abattoirs is the main reason.
1001. You say in regard to Macnamara and Elliott, you have heard them express an opinion in favour of the removal of the abattoirs on the ground of interested motives—that they would be likely to establish Abattoirs of their own—that is the reason? Yes.
1002. Macnamara and Elliott have, in course of conversation, led you to conclude they desired that the Abattoirs should be removed? They have expressed that opinion to me.
1003. In regard to Symes and Agnew, you say they have also expressed the opinion they would like to see the Abattoirs removed? That is not the way to put it, but that they want better abattoirs.
1004. You said, "I think they would like to see it removed to a better place"—you still hold that opinion? They have expressed that opinion to me—of course, some time since.
1005. "Because they are so cramped in the slaughter-houses, and cannot deal with their stock"—of course you will admit that that difficulty could be got over, because only one-fourth of the Island is utilised? So far as slaughtering operations are concerned, less than one-fourth.
1006. Have O'Brien and Roberts cried out for want of space? Yes.
1007. Is there a universal complaint on the part of the carcass butchers? Yes; not all at one time, but different times.
1008. They have all complained? I do not know any that have not.
1009. But is the whole sum and substance of the complaint that there is a want of room? Each individual has his own reasons for wishing the Abattoirs either altered or removed; some, no doubt, would like them to continue as they are at present, and I think in his inmost heart Mr. Macnamara would far rather see the present circumstances exist—the present condition of things gives him a grand monopoly.
1010. Your opinion is that the majority of the carcass butchers at the present time would prefer to see the Abattoirs remain in their present position, provided greater facilities were afforded? No; that is not my opinion.
1011. You think that many butchers have expressed the opinion that the removal of the Abattoirs is desirable in consequence of the condition of the meat which they are forced to buy there? Yes.
1012. That is, meat killed in a highly fevered condition? Yes.
1013. Have you seen the meat which is killed in the country? Yes.
1014. As an experienced man, if a hind or a fore quarter of beef were brought to a shop in George-street from the Abattoirs, and another were brought straight from the country, could you distinguish the one killed in the country from the one killed at the Abattoirs? No; but I can tell you that meat hanging in the Darling Harbour Meat Markets is in far better condition than meat hanging in the Abattoirs at the same time. I could not identify the difference in the piece, but taking the bulk you can identify the difference.
1015. You can tell by actual experience that one is fevered and the other is not fevered? That is not the whole question. I did say that the meat killed at the Island is fevered, but it suffers from other things besides being killed in a fevered condition. It has gone through such hardships that the animal has lost much of its fat also. The fevered condition is not the only deterioration the meat has undergone. The stock killed at the Abattoirs has suffered great deterioration owing to the hardships of the journey. Most of it in the hot weather is killed also in a fevered condition.
1016. Supposing it were brought direct to the Abattoirs in a ship from one of the country rivers or from Queensland, and were landed at the Abattoirs, and then driven to Parramatta, or some other place, would it not be in as fevered a condition, and lose as much of its weight as if taken to the Abattoirs? There is no stock brought from Queensland which is landed direct at the Abattoirs; it has all to be driven to Homebush and back again, and that stock is in a worse condition than meat trucked from Bourke.
1017. How far is it from the Abattoirs to Homebush? I think between 7 to 8 miles.
1018. It has to be driven out there during the night-time, has it not? Morning and night.
1019. *Mr. Wilks.*] The reasons that you assigned for a few carcass butchers objecting to the retention of the Abattoirs were, first of all, because there was want of space, and secondly, because existing conditions were not in the direction they wanted them? Yes.
1020. What about the keen competition? It is because they could not compete fairly.
1021. Why could they not compete fairly? Because of Macnamara and Elliott having practically a monopoly of the market, and also in consequence practically of a monopoly of occupation of the Abattoir.
1022. The practically have a monopoly of the Abattoir? Perhaps "monopoly" is a dangerous word. I say too large an occupation of the Abattoir.
1023. They have a practical monopoly? Well, monopoly is almost too wide a word; but they have an unfair occupation.
1024. Would you mind stating how that unfair occupation works, or in what direction it is? Of course the Abattoir is limited. A man who buys the largest needs the greatest space in the Abattoir. Unless very great precautions are taken, this occupancy of such a large proportion of the Abattoir accommodation cramps the smaller business men and injures their business very materially. Then, again, the position of what houses may be occupied in the central avenue of the Abattoir has a large bearing on the business of the butchers. The nearer to the front entrance gates the better chance has an occupied house of doing business. Naturally, the smaller men again suffer from the men carrying on the larger business and occupying a greater number of houses, having the best position in the market—that is, speaking of the Abattoir as a market.
1025. Then, all these matters could be obviated only by having an extended area? It is largely due, of course, to the imperfect design of the Abattoir. When I was superintendent I did my best to diminish this evil, but I could not obviate it entirely. The leases of the first six houses on each side of the avenue are submitted to auction sale.
1026. You stated in reply to Mr. Mahony that the area was not large enough? Yes.
1027. But in the earlier part of your evidence you say: "That is 20 acres more than would be required for a model abattoir"—so there is room there to afford sufficient area? It is difficult to make myself clear. That gives room for an ample Abattoir that will only partially meet all the requirements. If you notice in my recommendations I explain why a further area is required, and I think those reasons are vital when you consider the condition of the stock.

1028. And when asked your opinion in regard to the site you said that "as a slaughtering site the Island is magnificent?" Yes, as a site. It is a site that cannot be improved upon. It is elevated and open to all the winds. There are disadvantages, of course, which could be cured in time—such as the atmosphere of the surrounding neighbourhoods caused by polluted water. A. G. Kenway.  
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1029. *Mr. Law.*] You stated in your former evidence that it was absolutely essential that we should have metropolitan abattoirs? Yes.

1030. *Mr. Wilks.*] Would you kindly tell the Committee what you consider the unfair position occupied by Macnamora and Elliott? Their long purses enable them to carry on operations so largely as to unfairly handicap the smaller men.

1031. What effect has that upon the consumer? I do not know about the effect on the consumer, but it naturally strikes me that it enables Macnamara and Elliott to rule the prices of the retail trade, consequently enhancing the prices to the consumer, or the opposite.

1032. Did that objection hold good in your term of office there? Yes. It is a matter of history in the Abattoir that new capital desiring to enter into business on the Abattoir has been absolutely crushed out by combinations of the existing butchers at the Island.

1033. Then there is virtually a "ring" there? A present Member of Parliament, Mr. Anderson, is a sufferer in this direction. I have known business people to be driven away from the Abattoirs by combinations of the carcass butchers.

1034. Assuming that the Abattoirs were removed, the mere removing of the Abattoirs would not get rid of the difficulties of which you speak—they would occur just the same? If the Abattoirs were built on a large scale the evil would be overcome.

1035. But, even if they were built on a large scale, cannot you conceive that there would be some places of more primary importance than others? Not if the Abattoir were properly designed.

1036. It is a matter of design then? Yes. There should be no part of an Abattoir more valuable than another—that is one of the principles of designing a proper Abattoir.

1037. That is a *sine qua non* with regard to it? Yes. If in a public abattoir these evils exist, they would exist tenfold more if the matter were entirely in the hands of private enterprise.

1038. That is one of your strongest arguments, I suppose, for preferring the retention of the Abattoirs under State management? Yes.

1039. You prefer State management even to municipal control? Yes.

1040. You consider that under municipal control there would be a further power of "ringing"? Not that. I base my opinion on the recommendations of the Royal Sanitary Commission of Victoria.

1041. I understand that there has been a previous inquiry here into the administration of our Abattoirs at Glebe Island? Yes; by Messrs. Alexander Bruce, George Thornton, and Flood.

1042. Are you acquainted with the result of your deliberations? Yes.

1043. Would you mind telling the Committee what the result was? My opinion, on reading the report, is that the Abattoirs suffered even then from evils which had become aggravated by growth of business and neglect of repairs, and also by money being spent in making additions to the Abattoirs which were not in accordance with the original design. As to the management of the Island, it was ruled by a system of prosecution, not persecution.

1044. What am I to understand by the phrase "was ruled by a system of prosecution"? The rules and regulations written for the governance of the Island were attempted to be enforced almost entirely in the Police Courts. It resulted in the butchers, the journeymen especially, becoming largely demoralised—they would not do anything unless they were forced—and it enabled them to fight the officers of the department on a level footing in Court. To such an extreme had this bad system grown that a system of espionage on the men had come into existence. There was continual trouble, and no peaceable administration of the Abattoirs. Inspection duties were carried out in a perfunctory manner, there being only two inspectors.

1045. What is your opinion in regard to the desiccating, from its earliest stages? The McGovern machine, which until lately was in use, was the first machine that dealt successfully with the desiccation of blood and offal.

1046. Has that any bearing on what is known as "Swan's process"? It is the process which superseded Swan's process.

1047. Why was Swan's process superseded? By the printed report of the Commission of 1879 it was proved unsuccessful. The process was accused of creating an intense nuisance.

1048. How could the management and system be improved? The tendency of managing this establishment is to rule in a strictly official manner. Great discretion is required to preserve the goodwill, both of the master-butchers and of the working butchers, so as to enable the officers to effectually carry out the rules and regulations which govern the Abattoirs, otherwise continual appearance in Court, while possibly being successful in the imposition of fines, entirely kills any willing co-operation on the part of the butchers in attending to the sanitary condition of the Abattoirs.

1049. Is that fine system persisted in now? Yes; from what I hear I believe it is. I have not been to the Abattoirs since my office was abolished two years ago, or more. I avoided prosecutions as much as possible.

1050. The continuance of the fine system, you believe, is highly detrimental to the Government and the working of the Abattoirs? The improvements recommended by the Commission of 1879 to be carried out were put in hand by the Government of the day, and Mr. Shepherd and I were deputed as officers from the Public Works Department to carry out those works of improvement under the Treasury. The most important of the improvements were in the desiccating works which have gradually grown as improvements were discovered until six desiccators have been put in place. Whilst in good condition and kept in repair they abated nuisances very practically, but not so perfectly as they could have done if the Abattoir had been of better design. Additional calf and lamb houses were added; yards, lanes, and fencing improved and enlarged; and internal repairs effected. That brings me up to the time when I took office. Mr. Jager was retired in 1889, and I was appointed.

1051. Did you effect any sudden change in his administration then? I reopened the desiccating works, which had been temporarily closed.

1052. Under any new process? No; just as they were.

1053. The same plant? Yes; they had been closed with the view of using the Catternach process of disinfection, and conveying the whole of the materials to sea. 1054.

- A.G. Kenway. 1054. What was the result of the Catternach process? An utter failure.
- 15 Sept. 1896. 1055. Was it a costly experiment? I am speaking from memory, but I believe that their contract was £4,000 per annum for the cleansing of the Abattoirs, and the removing of waste products, from which no return was gained.
1056. There was no marketable product at all, then? No; it was all conveyed to sea. Complaints became very frequent of nuisances existing at the Abattoirs.
1057. Complaints from whom? Speaking from memory, I only know of complaints from Glebe Point and Annandale—complaints of the smells.
1058. From the fumes? There was no process being carried on. The smell was simply from the filthy state of the Abattoirs, and the Catternach process failed to operate. My connection with the matter had been severed during the continuance of the Catternach process, but the Treasurer of the day, Mr. McMillan, decided to reopen the desiccating works, to treat blood and offal in the same way, as had previously been done, it being considered the lesser evil of the two, and also as being the means of utilising waste products which were being conveyed to sea at great cost.
1059. Was there a strong demand for those products while you were in charge? There was not a strong demand, but I always got rid of them. I never sold them for less than £3 10s. per ton for the blood. The average price would be about £4 10s. We found that the manure trade was in the hands of two merchants' firms in Sydney—Montefiore, Joseph, & Co., and Gibbs, Bright, & Co.
1060. They virtually "cornered" it, then? They did, until I persuaded the Treasurer to accept the offer of Shepherd Brothers. I recommended concessions to be granted on these grounds: We had to sell to Gibbs, Bright, & Co., or Montefiore, Joseph, & Co. at their own figure, as they were the only customers. If Shepherd Brothers were given a contract for a definite period, their business was to mix the manures to suit the various customers, instead of selling it as with blood and so much offal, to mix the manures, and to induce a local trade. For some time they succeeded, and their trade was growing, until the Board of Health took control of the Abattoirs, when the Board suddenly ceased the contract. I believe that no such prices have since been obtained, consequently the returns from the desiccating works have been much reduced. I presume this is the reason why the works are closed. One of the first things I did on coming into office was to persuade the Treasurer to increase the inspection and sanitary staff.
1061. To what extent was that done? There were two inspectors before, and I procured three additional ones.
1062. At an expense of about how much? I think about £170 a year each.
1063. That would be about £600 a year? Yes.
1064. Were other expenses added to it? In connection with the sanitary staff I procured power to employ men as I needed them in addition to the permanent sanitary staff.
1065. A sort of *carte blanche* order? Yes. If we had a spell of wet weather, for instance, the yards and laies would get into such a terrible state that our permanent staff could not compete with it. If we undertook the whitewashing of the houses, that was an extra strain on our staff, which was met by an additional man or two, if necessary, being employed—not in all cases, but if necessary. The cleanliness of the Abattoirs was never allowed to suffer for fear of expense. Public health was of primary importance, the Abattoirs being an institution more for the preservation of public health and convenience than for returns to the Government.
1066. That is the view you hold now—that the Abattoirs are to be run on lines not commercial so much as benefit to the public health? Yes.
1067. Should not be regarded as a commercial venture? No. If it is made self-supporting, and to provide for a sinking and repairing fund, that is all it should meet. There was a sudden and tremendous increase of condemnation on the appointment of the increased number of inspectors, and in consequence also of Mr. Shelley acting first with a freer hand when supported by me. At this time the Board of Health attacked Mr. Shelley, and accused him of condemning cattle on a wrong basis; but no action was taken. Mr. Shelley has been continuously employed ever since the Board of Health took charge. In giving evidence just now I dwelt on the impossibility of applying regulations, and I should like to emphasise that it is utterly impossible to rule the Abattoirs satisfactorily by attempting to impose the rules and regulations by means of prosecutions in Court. During my administration I adopted the eight-hour system for all the working men. My own hours and the Inspectors' hours were very much longer, but for working men I adhered to the eight-hour system. The Board of Health have published that they made tremendous retrenchment in the administration of the Abattoirs on my retirement. I think it is important the Committee should be informed of the present cost of the Abattoirs.
1068. What is the present cost of the Abattoirs? I do not think it could be ascertained unless the Committee were to ask these questions—the total expenditure, including all fees to consulting engineers, &c. I am of opinion there is no retrenchment.
1069. *Chairman.*] You are of opinion that if questions were put to the Colonial Treasurer, under whose Department this matter comes, the fact would be elicited that no retrenchment has taken place in connection with the Abattoirs? No practical retrenchment.
1070. What are we to understand by that phrase? The closing of the desiccating works has resulted in the saving of so much expenditure, but is it retrenchment—is it not creating a nuisance?
1071. You think that by the mere saving of a certain amount of money, which is a limited one, by the closing of the desiccating works, a much greater evil is created by bringing about a nuisance in the conduct of the Island? Yes.
1072. Are you of opinion that the way in which the Island was conducted during your time, no retrenchment could be made on the lines you worked upon except at the expense of bringing a nuisance to bear on the public who surround the Abattoirs as residents? Yes, and allowing the establishment to go into disrepair. I should make an exception as regards the purchase of coal. The Board of Health buy coal very much cheaper than I procured it, but in my time I had no power to buy coal. I had to accept the annual contracts which other departments had to accept.
1073. Now, I suppose the Board of Health can go as a separate body and invite tenders on their own account, and buy coal for the carrying on of the Abattoirs? I believe they do not call for tenders.
1074. Do they keep a vessel to bring their own coal? They buy a cargo at a time, without calling for tenders.

1075. That, I suppose, would mean a considerable saving in the price of coal alone? Yes.  
 1076. *Mr. Wilks.*] About how much coal do they use a month there? When the desiccating works were going we used a little over 24 tons a week.  
 1077. They would probably save from £15 to £20 per month on that in buying it the way they do? Yes.

A. G. Kenway.  
 15 Sept., 1896.

THURSDAY, 17 SEPTEMBER, 1896.

Present:—

MR. BAVISTER,	MR. O'SULLIVAN,
MR. LAW,	MR. WILKS,
MR. WILLIS.	

J. S. HAWTHORNE, ESQ., IN THE CHAIR.

Alfred Allen called in, sworn, and examined:—

1078. *Mr. Wilks.*] What are you by occupation? Architect and surveyor.  
 1079. Where is your place of residence? Dixon-street, Darling Harbour.  
 1080. Have you had any acquaintance with the Abattoirs? Yes. A few years ago I was employed, with Mr. R. Seymour, the then Inspector of Nuisances of City of Sydney, on a Royal Commission in reference to noxious trades, and the slaughter-houses came within our province. I paid several visits during that time to Glebe Island, and I wrote a report thereon.  
 1081. What was the character of the report? A full report on the general management and sanitary condition of the Glebe Island.  
 1082. What was the tenor of that report? We found, as a general rule, that the Abattoirs were not equal to the requirements.  
 1083. In what way? The desiccating and general sanitary arrangement and appliances was insufficient for the requirement of the Abattoirs.  
 1084. About how long is it since that report was written? I think six or seven years.  
 1085. Who was in charge of the Abattoirs then? Mr. Oatley.  
 1086. You said that the desiccating plant was not sufficient? Yes. We also found that the excrescence from the paunches, where they were opened, strained into the harbour, but the gentleman in charge at that time was trying some experiments in reference to filtering it before it reached the water.  
 1087. Are you aware of the results of that filtering experiment? It produced water so pure that it could be taken in a glass, and unless one were told he could scarcely believe it came from that source.  
 1088. It was colourless? It was very slightly coloured—hardly perceptible.  
 1089. Was it obnoxious in any other way; I do not mean in regard to smell, but the effects of it? No. I should not like to drink it, but to all appearances it was fit to drink. It was filtered through some animal charcoal and sand, I believe, trenches being formed on the bank for that purpose, so as not to pollute the harbour. At that time also there was a boiling-down—belonging to Messrs. York and Rennie, I think—on the Island. We found that boiling-down to be the most cleanly of any we visited, and we visited every boiling-down within a circuit of 10 miles from the Town Hall.  
 1090. What was that owing to? It was worked very well. The men even worked in white sleeves and white caps, and the establishment was generally conducted in a most cleanly manner throughout. We approached it from various points in order to try and find out if there was any serious evil effect from it—approached it even in the middle of the night, from the Glebe side, and also from the Balmain side. Of course we found a slight smell from it. These works have since been removed. We found, when approaching the Island against the wind, an escape of gases from the Abattoir—a very objectionable cooking smell. We visited it several times and tried to find out whether it came from there or from the boiling-down, and there is no doubt that the greater part of it came from the desiccating house. But my opinion is that that could very easily be obviated by adopting modern appliances.  
 1091. But that was the gaseous vapours from a boiling-down? Not so much as from the desiccating works. The desiccating at that time was in full work, and we approached it from the bridge on the Pyrmont side, and it was at that time we found it worse—wind meeting us direct from the works. I daresay that Mr. Seymour paid something like six or eight visits to the Island.  
 1092. What is your opinion of the Island as a site for Abattoirs? My opinion is that so far as the Abattoirs on the Island themselves are concerned—I do not mean to say on that particular portion of the Island—the site could not be surpassed. There is a certain amount of isolation there. Wherever else Abattoirs are erected, a neighbourhood must of necessity grow up around it. But although this site is very close to the town, there are no families living immediately adjacent to it. We visited another proposed site for the Abattoirs.  
 1093. Where was that? Near Botany.  
 1094. What is your opinion of that site? The objection we raised immediately was that if an Abattoir were erected there a population would grow up around it.  
 1095. That is an objection that could be lodged against any site? Yes.  
 1096. In other words, a large settlement would follow the establishment of an Abattoir? A large settlement must of necessity follow its establishment there, and other trades would follow it, such as tripe-dressing, boiling-downs, glue factories, pig-feeding, duck and fowl farming, salting hides, tanneries, bone-grinding, soap and candle works, wool-washing, fellmongering, and many other trades.  
 1097. That is an auxiliary to it? Yes. There must be in the possession of the Government a map of Glebe Island—in fact, I obtained from the Government Printer a lithographic map of Glebe Island, and placed all the buildings up on that map; and I also obtained a large map of the City of Sydney, and struck a circle of 10 miles from the Town Hall, and marked every noxious trade, and made an index. I made two plans; one I left for the use of the city authorities, and the other must have gone in with our report.  
 1098. It is lodged with the Treasury, then? Yes; but the city authorities have my draft report now. It is very voluminous—almost a folio volume.  
 1099. Are you aware of any objections lodged by the slaughtermen themselves;—are they in favour of the retention of the Abattoirs at the present site, or their removal? Generally, I think they are in favour of

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A. Allen. the retention of the Abattoirs at the present site, which is near to the principal market for the meat. Sydney is the largest market for the meat. There may be some objection to the present mode of getting the cattle to the Abattoirs, but that could be obviated by having a light railway from the cattle-market. The island itself affords great advantages. There is the advantage of having a lot of high land there upon which the water is stored; whilst on the Balmain side it faces merely a few boat-sheds and iron foundries, where it could not be a nuisance. But as it stands now, and in its present state—that is, without the modern appliances that could be adopted—the Abattoir establishment is probably a small nuisance to the Glebe.

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1100. Speaking of the Glebe, are you aware of the Blackwattle Swamp drain? Yes; I know it.

1101. Do you think that a lot of the objection that is lodged against the Abattoirs is really due to the Blackwattle Swamp drainage? Probably.

1102. You think there is good reason to believe that? Very good reason to believe that. But I maintain that in connection with the Abattoirs, by adopting proper appliances, the drainage should become a question of very secondary consideration.

1103. Are you prepared to suggest those appliances? Yes.

1104. What are they? It depends entirely on the bunching of your buildings. Your buildings can be bunched on a half-circle or on a portion of a circle, and by bringing your drains from the centre of each abattoir, and then forming a canal down, you can form that canal so as to lead into some large cisterns near the water's edge, and they could be tapped and the stuff could be taken away in barges to sea, or it could be filtered or evaporated and desiccated.

1105. Which do you prefer? I very much favour the desiccating.

1106. Have you any knowledge of the desiccating plant there at present? They are not using it at present.

1107. Well, what they were using within a few months from now? I could not say. I visited the island three or four times within the last few weeks to have a look over it just to see the difference between now and my former acquaintance.

1108. And the evidence you are giving now is borne out by your recent visits? Yes. I found that they proposed to put a bridge; in fact I saw the marks for the bridge on both shores, both on the Island and Pyrmont side.

1109. You mean a causeway? Yes; to connect with Pyrmont. It will take a course directly over the post-office and some cottages, and go to where there would be a good site for abattoirs. If they are to be put up there at all, they should certainly be on that side—the side facing Balmain. There is a very large tank there, and pumps which deliver from the harbour, I think, equal to between 40,000 and 50,000 gallons of water per hour for cleansing purposes.

1110. Have you any theoretical knowledge in the matter of slaughter-houses from studying, as an architect, slaughter-houses in other parts of the world? I have seen them on the continent of Europe.

1111. Which have you visited? Some in the neighbourhood of Paris and Berlin, and also around London. The slaughter-houses around London I found right in the middle of some of the largest towns.

1112. You speak of the neighbourhood of Paris and Berlin;—what do you call the "neighbourhood"—within a mile or two? They are within easy distance of the city—not a greater distance away than our present Abattoirs from this city.

1113. And no objection whatever is raised to them? None whatever. I can see no objection whatever to abattoirs being placed in Sydney itself. They should be no nuisance if proper scientific appliances are brought into requisition, with strict efficient supervision.

1114. Up-to-date appliances? Yes; there is much wasted at the present time which really should be utilised and be turned into a source of profit.

1115. That is, the bye-products? Yes; I hear, but I do not know personally about it, that in Chicago they slaughter a great number of hogs, and people buy the gut here and pay 1d. per lb. more for it than they can buy it from our Abattoirs, because they prefer it. It is all dried and prepared. The bristles from the hogs are actually turned to use at Chicago. In fact, nothing goes out there, except in the shape of meat, powder as manure, or products as a source of profit, with no waste.

1116. They study the economies more? Yes; there is really no nuisance. Appliances are brought into requisition which destroy all the supposed nuisances. There is no doubt a great deal of what is mere prejudice. People do not like the idea of having abattoirs so close to them.

1117. You think it is more sentiment than anything else? Yes, I do.

1118. Have you any knowledge of meat-chilling works? I have had a little to do with chilling works. Mr. Kenway put up some chilling-rooms on the island—and I was with him as draftsman at that time—as perfect as any works of the kind in the Southern Hemisphere.

1119. I am asking you this question more especially because of the argument in favour of having the Abattoirs more in the country;—what is your opinion of that, so far as meat consumers are concerned;—do you think that they would get better meat by it? No, I do not think they would get better meat by it.

1120. Do you think the meat would be inferior? I think it would deteriorate to some extent.

1121. Therefore the consumers of meat would not benefit by the removal of the Abattoirs from Glebe Island? No, they would not; and our general supply for the city would not be so easily obtained if the Abattoirs were put a long way out of town. That seems to be the general opinion of the retail butchers. I have had conversations with them on the question, for I took a great interest in it, during the last few weeks—since there was a suggestion to remove the Abattoirs—because I was always of opinion that it would be almost impossible to find a better site for abattoirs than Glebe Island—so near the city, and yet to an extent isolated, and which gave the population such a chance for a widespread, and which also gave the so-called noxious trades which originate from the Abattoirs a chance to spread. I believe that there was some suggestion made that the Abattoirs should be taken out as far as Blacktown. If you take them out so far these trades must follow them:—l'anneries, glue-making, boiling-down, candle-making, tripe-dressing, pig-feeding, and fowl-farming, which all come within the designation "noxious trades." We visited all of them within 10 miles from the centre of Sydney. They necessarily emanate from the Abattoirs.

1122. But they do not surround the Abattoirs closely? At present they do not; they are scattered. We found them scattered generally along the swamps near Cook's River.

1123. Do you think that the removal of the Abattoirs from the present site would cause these noxious trades to come round them? It would cause them to shift to wherever the Abattoirs were. At present they are not a very great distance from the Abattoirs, and yet they are very isolated. I believe that if application were made for documents, you could obtain our rough notes; I believe they would be of some service to you. Beyond all question they are in the Town Hall. We calculated the quantity of stuff that was removed from the Abattoirs for various purposes and necessary to other industries, and the quantity of like refuse that was removed from the city, and it came to extraordinary figures. We found that the refuse that was taken from the cook-shops alone within the city of Sydney for feeding fowls and ducks came to over 60 tons a day.
1124. Have you any knowledge of what is known as the "driving stock nuisance"? No.
1125. You never heard of it? I have merely formed a casual idea of it. No doubt it must have a certain prejudicial effect on the population in the places through which the cattle are driven; but my idea has always been that that could be obviated to a great extent by the construction of a light railway from the cattle market to the slaughter-houses.
1126. Do you think that the re-trucking would have any ill effect on the cattle? No; I do not. Why should it have a more evil effect here than it has in London? They never drive cattle through the streets of London. At the docks they are all put aboard trucks and trucked in.
1127. That is done to-day? Yes; and it has been done for many years. I was there with Mr. Bazalgette, the engineer to the Metropolitan Board of Works, when they were building the new cattle-markets near Snow Hill. The Islington markets, they also were built in my time. I was with Professor Dr. Donaldson at that time. He was the advising architect to the Crown, and it came within our jurisdiction to supervise works of this kind.
1128. I should like to know your opinion on the matter of control;—are you in favour of the present State control, or of municipal control, or would you favour handing the control of the abattoirs over to private enterprise? Whatever you have must be under very strict control, and from experience I think that the Government are the most capable of carrying out that control.
1129. The supervision would be more rigid under the State? I think so. I have been an officer both under the Government and under the Municipal Council—three or four times under the Municipal Council and three or four times under the Government.
1130. You would not countenance the idea of any municipality having anything to do with it? I would not.
1131. And you do not favour private enterprise? No; I do not.
1132. You believe in the continuance of State control? Yes.
1133. Under the present State control you think there is a rigid surveillance? Yes; we are not under the same advantages here as they are in a large city like London. There I should, perhaps, have a very different opinion. I might be in favour of municipal control there.
1134. *Mr. Willis.*] You say that meat deteriorates when killed in the country and sent here by truck? I think it will deteriorate to some extent in chilling and then sending it down. Sometimes we have very hot weather in summer, and two or three days will make a very great difference to meat. It does even in the butchers' shops.
1135. Then you do not favour country killed and chilled meat sent down for the consumption of people in the metropolis? No, I do not.
1136. You think it would deteriorate through climatic influences? I do.
1137. Are you aware that in America they run meat more than 1,000 miles, and then use it with beneficial effect on the people? That is very likely. If the people in this country had chilling rooms, in the shape of cars, to carry meat, that would certainly alter my opinion; but my opinion is, that chilling it in the country and then shifting it as they do to Sydney, gives it so much time to thaw that it deteriorates.
1138. As you seem to be a practical man in this respect, I should like to know if you are in favour of what is known as country-killed meat, trucked in refrigerating cars, and sent to refrigerating chambers in Sydney, and taken from those chambers and used? Yes, I am, certainly.
1139. As against meat killed in the present Abattoirs or any set of Abattoirs, in or about this or any other city? I would not put it against that; but I say that the meat would not deteriorate in being shifted carefully in that manner. I am in favour of it.
1140. Do you think that that system would have an advantage in giving the people better, purer, meat—less knocked about? I can scarcely say that, because it would be the shifting about that would be prejudicial to a certain extent—the handling of the meat. Meat wants, at any time, to be handled as lightly and as little as possible.
1141. But do you not think that killing in the country at various centres, and sending the meat down as I have just stated, would obviate the sanitary objection that there seems to be to the various abattoirs in the large centres of population? No; I believe the objections to the abattoirs in the large centres can be so easily surmounted that they would be overridden by other considerations.
1142. You say you inspected a site near Botany? Yes.
1143. With whom did you inspect it? There was an old commission—Mr. Michael Chapman, Mr. Pope, I think, and others.
1144. What commission? Commission on Noxious Trades. The abattoirs question was at that time agitating the public mind very considerably.
1145. Was that a good many years ago? Yes.
1146. Can you tell me where that site was? It was on the sea-shore, on the far head of Botany Bay—at Kurnel.
1147. You found that place unsuitable? Yes; because of the difficulty of getting cattle there, and the difficulty also of getting meat away, and I also thought that, at that distance, it would certainly draw other noxious trades, and of necessity, a population would settle around it.
1148. You say you have been an officer under Government and municipalities? Yes; I was with Mr. Barnett six years.
1149. The New South Wales Government? Yes; I was with Mr. Barnett six years, and was also connected with the Harbours and Rivers—on Floods Commission; and I was also special draftsman with Mr. Bennett, Commissioner for Roads, on all the Northern roads of the Colony. I was likewise surveyor for condemning buildings in the city of Sydney, and I wrote a report on the Chinese quarters of the city.
1150. For whom? For the City Council.

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- A.A. Hen. 1151. What became of that report? I suppose they must have it by them now.
1152. Did they adopt it? It was for the use of the Council's inspectors.
- 17 Sept., 1896. 1153. Was it ever made public? I do not think so. I also made a report, with plans, of all the dairies within the municipality of Sydney.
1154. For the Municipal Council? Yes.
1155. You say that the present site of the Abattoirs might be used with advantage if we were to construct a light line of railway from the present saleyards at Homebush and the cattle were retrucked there, because that would obviate the cattle-driving nuisance? Yes.
1156. Do you not think that if, after the cattle had come a considerable distance in trucks, they were unloaded and retrucked after being sold, and then conveyed to the place where the Abattoirs now are, the beasts would be terribly knocked about, and the meat would be considerably deteriorated by that great amount of trucking? No, because for the large consumption of a city like London or Paris, they go a very great distance, travelling many hundreds of miles by sea and then trucked and retrucked.
1157. What I want you, as a practical man, to tell me and the Committee is, whether you think that the constant and continuous knocking about of the cattle in the manner I have stated, would deteriorate the meat? No.
1158. *Mr. Law.*] According to the whole of your evidence, it seems to indicate that you believe that the present site is the best that could be found for abattoirs? Yes.
1159. And that we should have a large abattoir in the city? As near the city as possible.
1160. And your experience in other parts of the world is that there have been far more extensive abattoirs carried on in as close proximity to these cities as Glebe Island is to this city at the present moment? Exactly.
1161. You know that at the present time, only one-fourth of Glebe Island is utilised for abattoirs? Yes.
1162. There are about 8 acres utilised, and 32 acres on the other side which are not used? Yes.
1163. And that is the particular spot you think the abattoirs should be upon? Yes.
1164. You have also stated that wherever the abattoirs go, the population is sure to follow? Yes.
1165. And settle down immediately adjacent to the Abattoirs? Yes.
1166. It is not possible for people to settle down immediately adjacent to the present Abattoirs? No.
1167. In consequence of Glebe Island being surrounded by water? Exactly.
1168. In other words, it would be impossible for anyone to go and live within 200 yards at the very nearest? Exactly.
1169. And about nine parts of the circle round they could not get within a quarter of a mile of it? Exactly; and consequently, the trades that emanate from the Abattoirs are dispersed in the outskirts of the city like Patmore Swamp, and other places, to which people can easily drive in carts, whereas, if the abattoirs were placed at Kurnel, and there was a light railway to take the cattle there and to bring the meat to the city, that would not answer the purpose of bringing away what is brought away by these men in their carts to feed fowls, pigs, &c.
1170. You were asked a question by Mr. Willis in reference to chilled meat, and I think you stated that it would not be in any better condition than that killed at Glebe Island? Yes. I also think that if the abattoirs were distributed about the country, it would be almost impossible to have proper supervision—at any rate, it would be a very expensive process.
1171. I was just going to ask you a question on that point. There is another: A considerable number of bullocks come to the Island from the rivers and from Queensland, and is it not a fact that the bullocks which come from the rivers, direct to the Island, always arrive in a much better condition than they would if the abattoirs were at Parramatta or elsewhere? Much better than if driven, there is no doubt about it. report that you have taken considerable trouble in preparing? Yes. [See *Appendix A 2.*]
1172. *Chairman.*] This report marked "Glebe Island Abattoirs," and dated 24th August, 1896, is a 1173. It is the result of your previous connection with the Abattoirs, as well as recent inspection? Exactly.
1174. Did you write this report with the idea of having it put in as an accompanying report to your evidence? Yes, if so required. I thought it well to visit the Island in order to refresh my memory, and then I jotted down a few notes.
1175. Did you have a look at the present Abattoir buildings, to see if it would be possible, by the expenditure of a large or small sum of money, to make them suitable for all time as abattoirs for the city of Sydney? No, certainly not. I certainly should not hold with spending any money on the present Abattoirs.
1176. You think that the expenditure of any money on the present Abattoirs would be a waste of money? Yes, I do indeed.
1177. I think you had something to do, either directly or indirectly, with the erection of the refrigerating chamber there? Yes, I was connected as a draftsman with Mr. Kenway, in regard to that and other buildings on the Island.
1178. Do you think that the present building, which was originally intended for a refrigerating and cooling chamber, could be utilised for the purpose for which it was built in the event of new abattoir houses being built on either the present site, or on the opposite side of the road? Yes, I do indeed; they were very carefully thought out by Mr. Kenway and others, and are well up to date.
1179. Roughly speaking, what do you think a building of that kind would cost—I mean a building and also a chimney stack such as is attached to the engine-house there at the present time? I think £12,000 or £14,000.
1180. The building is comparatively speaking a new one? Yes, and all modern appliances were considered in carrying out that building. It is a great pity to see it used as a slaughter-house—a thorough waste.
1181. At the present time, owing to the small number of slaughter-houses available, the authorities have transformed it from a refrigerating chamber, for which it was built, into an ordinary slaughter-house? Yes, and the construction of that class of building is considerable. The construction of an ordinary slaughter-house is nothing in comparison.
1182. I notice at the end of your report a sketch of a slaughter-house;—is that a sketch plan of the present buildings? No, that is merely a suggestion for bunching, so as to bring the easy working, the drainage, and the ventilation within a limited space.

1183. This plan then, I understand, is something that occurred to your mind as a suitable plan for any future abattoir that might be built by the Government? No; I will not go so far as that. It is a mere suggestion that occurred to my mind. I thought that something of the kind might be done. You can form your bunching, perhaps, in an improved manner in comparison to that, but the bunching of the buildings thoroughly simplifies the most necessary requirements—that is to say, the drainage, the very easy working of the whole of the abattoir, and the ventilation you bring within a limited space.

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1184. You think that this rough sketch which you have submitted for the consideration of the committee would be a very great improvement on the construction of the present Abattoirs? In the construction of the present Abattoirs there seems to be no real plan. The avenues themselves are not half wide enough to work them properly, and the buildings are scattered, probably from being built piece by piece, and of various material, in fact no uniformity.

1185. You think, then, that to work the present Abattoirs properly it would be necessary to have at least twice the space between the two rows of slaughter-houses that at present exist? There is no doubt about it. There is not room for carts to pass if one stands back to one side of the slaughter-houses, and another to the other side. I maintain that you should have a centre avenue sufficiently wide to give a free passage.

1186. For carts going up and down? Yes; so that one might be backed against one side of the Abattoir and another against the other side, and then there should be a free passage between them.

1187. Did you go through the slaughter-houses yourself? Yes.

1188. Did they all seem to be cleanly? I certainly could not find very great fault with the slaughter-houses themselves. At any time I have been there they seemed to be under very fair supervision.

1189. Did you come in contact with any of the officials of the Island the day you visited it? No.

1190. Not at all? The inspector was away; he was in town on both occasions. I left my card at his office.

1191. Did you have any conversation with any of the officials? I had a conversation with those about different parts of the Island.

1192. But this plan was simply the outcome of your own thoughts and imaginations? Yes; it is a mere suggestion.

1193. You have taken no suggestions from any of the employees on the Island? No; I merely drew that in the same way as I should do in laying down a plan for any large building, like a barracks or an hospital.

1194. What is your idea as to the material to be used in the erection of abattoirs, brick or stone? I should very much prefer brick.

1195. Do you think that abattoirs are better built in one storey, the same as is the case at Glebe Island, or would you prefer two-storey buildings to be used? One-storey buildings for the abattoirs themselves. I do not mean to say that I would not, perhaps, for offices and so forth, erect a block or two of two-storey buildings, but so far as the abattoirs themselves are concerned, they should be one storey, and should be made of brick, for the simple reason that the present stone buildings are very much fretted away by the action of the salt air, and I should be afraid to trust only the very best picked stone. This could be used to advantage, especially where not much exposed.

1196. You think that would not apply to bricks? There is another question that that raises. It being one of the very early buildings put up on Glebe Island, they took the top cap, and, in geological experience, the top cap of a quarry is always the softest and will decay; but since that time they have got very much deeper into the quarries, and they get a superior class of stone.

1197. Your opinion is that if the Government decided to build new abattoirs at Glebe Island, they have plenty of suitable stone for the erection of suitable buildings? That they have plenty of suitable stone, I have not the slightest doubt, but I should object to using stone, in consequence of its quality of absorption, for one thing, unless it be lined inside; and I should line brick in the same manner, with tiles or white glazed brick, such as is generally used in butchers' shops. It is cleanly and very easily washed. With our heat, and the evaporation, stone walls absorb too much.

1198. Would you like to put in this plan? That I will leave entirely to you. [See *Appendix A 1.*]

1199. In producing this plan, you are not in any way desirous of forcing your architectural skill on the public as being superior? Certainly not.

1200. You are of opinion that our present Government Architect's department is capable of preparing a plan that would be quite suitable for a modern abattoir? Yes.

1201. This is a sketch which you have prepared in your leisure, after having visited the Abattoirs, and also from the practical experience that you had in connection with abattoirs when engaged by the City Council in regard to the sanitary arrangements of the city and suburbs? Yes.

1202. You have no objection to place this plan, simply as a rough sketch and suggestion, for the guidance of the Committee in bringing up their report? Yes; because the building in itself, as an abattoir, must be considered not only by an architect, but it wants the combined skill of a thoroughly good engineer, and I know from experience that in the Government service you have gentlemen as much skilled both as architects and engineers as there are in any other part of the world.

1203. *Mr. Wilks.*] In this scheme of yours have you done anything to prevent such disadvantage as it is said some of the carcase butchers suffer from owing to others having obtained preferable position as regards the slaughter-houses? Yes.

1204. You have put them all on an equality so far as business facilities are concerned? Yes; as far as I could.

Arthur Grey Kenway recalled and further examined:—

1205. *Chairman.*] I think you stated that the design of the present Abattoirs was so defective as to prevent any proper and suitable improvements being made there? Yes. The dilapidations, even when I was first connected with the Island, were so advanced and so huge that to put them in a really proper state of repair meant as much nearly as rebuilding.

1206. *Mr. Baxister.*] As a matter of fact it could only be satisfactorily done by rebuilding? Exactly.

1207. *Chairman.*] What is the difference between the past and the present state of the Abattoirs? Confining the past up to the time I took office, owing to the continual ban of banishment under which the Abattoirs

A. G. Kenway. Abattoirs had existed, no Government had felt justified in spending sufficient money for the same reason alluded to—it meant entirely rebuilding—but on my taking office, and pressing the Government repeatedly and repeatedly, I did get such work of improvements carried out as made the Abattoir in a tremendously different condition from a sanitary point of view compared with what it was when I first took charge.

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1208. Were designs prepared during Mr. McMillan's administration as Treasurer of this Colony for a model abattoir? Yes. Mr. McMillan, seeing the state of affairs, and how impossible it was to put the Abattoir in a proper condition, and knowing the Abattoir question was pressed on himself in the House repeatedly, instructed me to prepare a design for a model abattoir, irrespective of site or cost, I presume with the object of seeing what an abattoir should be if it possessed every requirement irrespective of cost.

1209. It was not drawn with the idea of erecting a new abattoir on Glebe Island? No.

1210. Is that sketch or design in existence now? Yes, at the Treasury.

1211. Did you estimate the probable cost of it? Yes; the whole erecting cost, the working cost, and the revenue, are all estimated there. Even taking the cost at £250,000—that expressing not the practicability, but the idealness of the design—and the killing on a scale equivalent to that outlay, it would still return a revenue of 7 per cent. on the outlay.

1212. What was the proposed design;—was it of stone or of brick? It was a design in which details were not displayed on paper, and you would require an hour or two to question me on the details.

1213. There was no sketch made of the details? No specifications written.

1214. But a design was drawn? Yes, detail drawings.

1215. Was that done by yourself or by some other architect? By myself; I employed a draftsman to prepare it.

1216. That was quite outside the Government service? Oh, no; it was while I was carrying out my duties at the island.

1217. You made use of one of the Government draftsmen to help you in the matter? Yes, I employed a temporary draftsman. Imperviousness of material was fully considered right through every detail—non-absorption.

1218. *Mr. Wilks.*] What material did you decide upon? Different materials; glazed bricks, slate, asphalt, and cast iron according to the circumstances. The design being an ideal one, I included also a meat market, a meat exchange, hide exchange, wool exchange.

1219. *Chairman.*] You must have had in your mind's eye at that time some position of the Abattoirs that would be tolerably central, or in close proximity to the centre of the city? What I had in my mind was a kind of standard or guide upon which any future design of an abattoir might be prepared. It was a record of all requirements of an abattoir.

1220. You probably took for your basis of work the position of the present abattoir, or an abattoir in an equally close and accessible position to the city as the present Abattoir? No; I had then somewhat the same opinion as I have now as to where a metropolitan abattoir should be.

1221. But it would necessarily have to be in close proximity to the city, if you are going to have a meat exchange, a meat market, and that kind of thing? No; I think that if—there is a great deal in the word "if"—the Abattoirs are fixed anywhere between Parramatta and Blacktown, there will be the centre of the business, and all connected businesses.

1222. As regards the meat market and exchange you speak of in connection with this ideal plan which you supplied to Mr. McMillan when he was Treasurer, did you have an idea of a wholesale market or of a retail market? Wholesale for the carcass butchers' trade.

1223. Where the retail butchers of the city and suburbs could purchase their supplies? Yes.

1224. Since you were here last you have visited the Wentworth Estate, near Homebush, and also the Newington Estate further on? Yes.

1225. What is your opinion in regard to either of those two positions as a site for future abattoirs to be erected upon, that is, having in view the saleyards and the supply of the city and suburbs with meat? The relative position of both to the saleyards is admirable.

1226. The Wentworth Estate is of course almost on the opposite side of the street to the present saleyards? It is only a street that divides them.

1227. Do you think that abattoirs erected on the Wentworth Estate would be found objectionable to the people who have made their homes at Homebush and Strathfield? Yes; there is not sufficient land to properly isolate.

1228. How does that apply in regard to Newington;—is that such a long distance away that it would not be objectionable? There is not sufficient distance. There is public prejudice as well as public interest. Public prejudice, although apparently sentimental, would be all powerful with any Government who might think of choosing that site.

1229. Do you think that the erection of abattoirs on either the Newington or the Wentworth Estate would be likely to bring down the value of properties already erected, and in the municipality of Strathfield? I do think so.

1230. And are you of opinion that, no matter how careful the erection of the abattoirs, if erected on either of those sites, might be, objectionable smells would arise sufficient to reach either of the fashionable suburbs of Strathfield and Homebush? Yes; they already reach there. Yesterday was not a hot day by any means, and I could trace smells all round the district.

1231. What did the smells arise from? From boiling-down and from the stockyards.

1232. Even from the present stockyards there is an objectionable smell arising? Yes.

1233. Where is the nearest boiling-down to those estates? The only place I know of now is not a boiling-down, but is the Sydney meat-preserving works at Auburn.

1234. Did you find an objectionable smell coming from that? Very.

1235. Do you think it would be impossible to have abattoirs erected even on the Newington Estate without preventing a nuisance to the suburbs west of Burwood and Strathfield? So far as an abattoir and desiccating process are concerned, it is quite possible. It is quite possible to have an abattoir in the heart of a city; but with the connected trades, and with the want of continual success in desiccating and other operations, there always will arise nuisance more or less, and complaints would always be made, whether justified or not, so long as the abattoirs were there. But at present Hastem's Creek, Duck River, and another small creek are as black as ink, and—the only words I can use—absolutely stink.

1236. Is this water at the present time emptying itself into the Parramatta River? Yes; and the part of the Parramatta River facing those two estates is already very much fouled. A. G. Kenway.  
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1237. Do you think that if the abattoirs were erected on either the Newington or the Wentworth Estate they also would in a very short time be likely to deteriorate the present state of the Parramatta River? If the two estates were acquired, and the Homebush flats were reclaimed, it is quite possible that sufficient land would be acquired to utilise all the waste from the abattoir without polluting the Parramatta River; but I do not think it possible that the noxious trades connected with an abattoir could be accommodated there at all. If they are accommodated there the river, no doubt, will be fouled.
1238. In all other respects those estates are in a convenient position as regards the present cattle sale-yards? Yes. There is also the advantage that they are connected with town both by rail and by water—that is if the water can be made deep enough.
1239. Do you think it would be possible so to deepen the water (say) in close proximity to the land as to allow of large steamers with ocean-borne cattle coming right up there? I do not think that is possible. I do not think an ocean-going boat could be brought anywhere near there.
1240. Not even if a span were put in the railway bridge running across the Parramatta River near Ryde? I would have to consult plans of the Harbours and Rivers Department, and soundings, before I could speak on that.
1241. How does the land seem adapted for the purposes of abattoirs? Admirably. It is porous, and with cultivation, with the waste products of the abattoirs, it would, no doubt, yield good crops.
1242. Do you think there is enough land there not only to erect abattoirs on but also to keep cattle there while resting previous to being killed? Nothing like sufficient.
1243. Would it be likely to prove a nuisance to the present Newington Asylum which is there? Yes; that would have to be wiped out.
1244. Do you think the present asylum would have to be taken away from there? Yes; and the land included in the abattoir premises.
1245. Is the land at present considerably isolated, or are there many houses erected in close proximity to those estates? There are not many houses of considerable value built in close proximity; but with the lie of the ground, if the abattoirs did create stinks, the stinks would be very perceptible in some of our most fashionable suburbs, whilst the enormous frontage to the Parramatta Road, which is almost its greatest frontage, would prevent isolation as much as we should like. The frontage to the Parramatta Road would be of no value to the abattoir, but it increases the value of the land, and it would mean increasing the purchasing cost.
1246. Do you think the Government would not be able to sell the frontage to the Parramatta Road, perhaps for business purposes, with the prospect of the abattoirs being established there, and that that would perhaps recoup them for the large expense that would be incurred on account of this valuable frontage? You would be bound to hear complaints from people who bought that land.
1247. *Mr. O'Sullivan* ] Am I to understand from your evidence that you prefer to see the abattoirs established at some point between Parramatta and Penrith? I do not go so far back as Penrith; I say between Parramatta and Blacktown. I should like to get as near a focus of railways as possible, so as to have a stock centre.
1248. Failing the abattoirs being established there, would you prefer to see them continued on Glebe Island, provided that the establishment there at the present time were extended and furnished with up-to-date appliances? No, for this reason: the primary object of an abattoir is the production of the best meat, and the killing of meat that is not properly rested, and consequently fevered, is the principal objection to a site where there is not sufficient area. The agistment—resting—paddocks should be the key of the whole site.
1249. Where is your second choice, then? I should say either the Newington or the Wentworth Estate is the next best place.
1250. But you have just given strong evidence against those two positions? Only in regard to area and want of isolation.
1251. But you also testified very strongly as to the direful results of drainage from those places? That is because of the want of area, and only because of that. The natural fall of the land is admirable, but it all falls into the Parramatta River.
1252. But supposing you had twice the area they are now offering there the drainage would still go into the Parramatta River? If we had twice the area no foul drainage would leave; all the waste products could be utilised on the soil.
1253. Putting aside the fact that you have not twice the area, you still think that one of those two positions would be the second best place to go to? Yes, apart from that.
1254. I gather from your previous evidence that you put out of sight altogether the proposal to go to Kurnel? Yes; I do not like it at all. No amount of cultivation could make that soil suitable for the growing of grass. Stock could not possibly feed there, however it was treated, and, again, it is so inaccessible that it would never become a stock centre.
1255. But supposing a railway were made from Glebe Island to the Homebush paddocks, where you could or ought to be able to get grass, or to some other place where you could get grass, could not Glebe Island then be made into a better abattoir than it is at present? It could be made a better one; but the retrucking of the stock entails a tremendous amount of bruising and further harassing of the stock, and increasing the fevered condition. Our wild cattle cannot be trucked and retrucked like cattle in other countries, which are stall fed. In America they do not allow stock to travel more than a certain distance without being allowed to rest, be paddocked, and retrucked, but the experience we have with our cattle here, with the one trucking, has prevented any resting or retrucking ever being adopted. The process is exceedingly cruel.
1256. You object to Glebe Island on the ground of stench from there going into a populous district? The waters of the harbour surrounding it are very foul. The drainage at present, although it will not be the case in future, at Blackwattle Bay, White Bay, Rozelle Bay, and Johnstone's Bay, all tends to foul that water. There is no scour; no continual current.
1257. But do not they, in the City of Glasgow, and also in the City of Chicago, where there is a tremendous population, carry on abattoirs successfully by using the latest machinery for desiccating and for preventing smells? I believe so.
1258. Could not we do the same here? We could, if the products had an equal value. Here manures are comparatively valueless; there they pay for production. 1259.

- A. G. Kenway. 1259. Would there be no sale, then, for the bye products of the Abattoirs here? Very little.  
 1260. There is a sale at the present time for manure from Glebe Island, is there not? I believe, but I do not know personally, that since the Board of Health took control they have found the sale of manures almost impossible.  
 1261. *Mr. Willis.*] Can you say what the value of blood manure is here? The trade is in the hands of one or two, and I think that if you were to offer 20 or 30 tons of blood to-morrow you would not get more than 30s. or 40s. a ton for it, but if you offered 200 or 300 tons, which would make a shipment, you would get £4 or £4 10s. a ton for it.  
 1262. Are you aware that the Bourke Meat-works have contracted for all their manure with a New Zealand firm, at £4 per ton, delivered on the works at Bourke? I quite believe it, if they supply it on a large scale, and act in a business-like way in making a contract; also, their manure would be more fit for general market purposes.

MONDAY, 28 SEPTEMBER, 1896.

[The Committee met at the "Grand Hotel," Melbourne.]

Present:—

MR. BAVISTER, | MR. LAW,  
 MR. WILKS.

J. S. HAWTHORNE, ESQ., IN THE CHAIR.

John Robertson examined:—

- J. Robertson. 1263. *Chairman.*] What is your official designation? Superintendent of the City Abattoirs and Inspector of the City Cattle Markets.  
 28 Sept., 1896. 1264. How long have you been in your present position? Three years on the 9th of November last.  
 1265. You were previously engaged in a subordinate capacity? Yes—assistant inspector to Mr. John Gee, the late superintendent.  
 1266. Had you any previous experience in the meat-killing business prior to becoming engaged by the City Corporation of Melbourne? Yes; almost ever since I was 12 years of age, both as wholesale butcher and slaughterman.  
 1267. In the colonies or in the old country? In the old country—for the London dead-meat market.  
 1268. In what part of the old country? Aberdeen, in Scotland.  
 1269. Did you come out under engagement to the Corporation here, or did you obtain engagement after you arrived here? I obtained an engagement after I arrived here. With the exception of about three months, I have been in the employ of the City Council ever since I came to the colonies.  
 1270. In what year did you come here? In 1883, I think.  
 1271. What is your general opinion in regard to the conduct of your abattoirs;—are they, as constituted, up to your ideas of what abattoirs should be? No, not exactly—not the beef-houses.  
 1272. The beef-houses you look upon as being somewhat out of date? Yes, they are getting out of date.  
 1273. It takes a considerable amount of labour, I suppose, to keep them in anything like a state of cleanliness? I spoke not so much from that point of view as because I believe in carcasses of meat being hung in rooms where there is nothing else hanging—for them to hang and cool properly there.  
 1274. The great difficulty which you experience at the present abattoirs is on account of the want of proper accommodation for hanging and exhibiting meat? Yes; the hanging-rooms are too small in the small beef-pens for the business that is being done now.  
 1275. The present abattoirs, I presume, were built when the population of Melbourne was very much smaller than it is at the present time? I believe so.  
 1276. How long have they been erected? As far as I know, over thirty years.  
 1277. That is, the first portion of the abattoirs was built about thirty years ago.  
 1278. Have you made any additions to them since then? Yes; there have been additional beef and additional mutton houses erected, and also the pig place, which was lately put up.  
 1279. Where the new slaughter-houses for sheep and cattle now exists, were there previously any slaughter-houses? I think they have been added on to, but I am not positive.  
 1280. The new houses are altogether additional premises? Yes; I think they are all additional.  
 1281. Would it not be possible for you to erect slaughter-houses for beef on something like the same lines as those you have adopted in building the new slaughter-houses for sheep and pigs? Yes. When we do build them, they could be built on a very much improved principle, compared with the beef-houses as they are now.  
 1282. What is your idea in regard to the cattle sale-yards and abattoirs—ought they to be in very close proximity to each other? Yes; as close as they can possibly be.  
 1283. Do you think that it adds to the quality of the beef if the cattle are driven as little as possible after leaving the trains? Yes; cattle should never be killed in a heated condition, or immediately after travelling. They should always be killed in as cool a condition as possible.  
 1284. If cattle had been driven 5, 6, or 7 miles the day before being killed, would you be able to detect it from looking at the meat immediately after the cattle had been killed? If they had been driven for 6 miles, and killed immediately after, you could detect it from the appearance of the blood-veins of the beef.  
 1285. And it would have a tendency to deteriorate the quality of the beef? Well, meat not properly bled, and killed in a heated condition, does not keep more than about half the time that meat killed and bled properly in a cool condition does.  
 1286. Are cattle from the country driven to your sale-yards, or are they brought by rail? There are some driven, but the bulk comes by rail—almost all the cattle come by rail; in fact, all except local cattle, which come from places within 20 or 30 miles.  
 1287. Where does your meat supply principally come from? Our meat supply comes from Gippsland, New South Wales, and Queensland, but the supply from Queensland is very light. I am talking of the direct supply, but there are a lot of Queensland cattle brought into Victoria and fattened, and kept for about two years, and then brought to the markets here. There are very few now brought direct from Queensland to be slaughtered here.

1288. Your principal supply, then, comes from Gippsland and New South Wales? Yes; and the western districts of this Colony. J. Robertson.

1289. How long are they generally kept in the sale-yards before being slaughtered? They are all received at the markets the day before sale—mostly at night. 28 Sept., 1896.

1290. Which are your sale-days? Wednesday for cattle, and Monday afternoon and Tuesday for sheep.

1291. And your sheep, I suppose, come in trucks, principally by rail? Yes; except local flocks—travelled in.

1292. How long do they remain in the sale-yards as a rule after being sold by the auctioneers? From half an hour up to half a day, perhaps.

1293. And then they are driven from there to the abattoirs? Yes.

1294. What distance would you reckon the abattoirs to be from the sale-yards? About half a mile.

1295. Do you drive them over your own territory only, or is there a public highway between the sale-yards and the abattoirs? There is only Epsom Road, which divides the sale-yards from the abattoirs.

1296. Do you ever find any difficulty in driving there, even at night;—do cattle ever escape or cause annoyance to the public? Very seldom; but still, I think that cattle going to the city abattoirs should not have any chance of escaping at all.

1297. If the sale-yards were situated, say as in the case of New South Wales, where they are at Homebush, a distance of about 6 or 7 miles from Glebe Island, and where the cattle, after being sold, have to be driven along metalled roads to, in many cases, yards close by, and then taken on and slaughtered at the island—would that, in your opinion, cause a great deterioration in the quality of the meat? There is no question about that, because in consequence of the knocking about which they receive both before they go to the yards and whilst they are in the yards, and also in going from the yards to the abattoirs, the beasts, if they are slaughtered right off, must be in a very bad, heated, excited condition. The muscle is very dark in cattle that have been travelled and knocked about, and they will never bleed properly, and the veins through the meat have a red appearance.

1298. Your opinion is that to drive cattle such a distance as that is unwise, in view of the desirability of keeping up the quality of the meat? Yes, I am quite positive about that, especially considering the way that the cattle are driven here—generally at half a gallop.

1299. Does the same observation apply in regard to sheep and pigs? It would apply, but the sheep are never driven to the same extent; they do not seem to get heated to the same extent. Cattle will go on for miles and miles, whereas if you push sheep they break down altogether, if they are good sheep.

1300. As to the delivering of your meat, I understand that it is taken from the abattoirs to the city and the suburbs? Yes, that is correct.

1301. You have a central meat-market? Yes; there is a city meat-market.

1302. Do you convey all the meat that is killed at the abattoirs to that central market? No; the butchers can take it where they like from our abattoirs.

1303. Do you exhibit meat in any large quantities at the abattoirs for butchers to come and inspect, and buy it if they like? We have nothing of that sort at the abattoirs.

1304. You do nothing in the way of selling meat at the abattoirs? There is, perhaps, not one carcass of meat bought at the abattoirs in one month.

1305. The carcass butchers do not keep salesmen at the abattoirs? Not one salesman.

1306. The abattoirs, then, are not leased out the same as is done by the Government of New South Wales in regard to the New South Wales Abattoirs at Glebe Island—you do not lease out the abattoirs to carcass butchers? No, we do not.

1307. You charge so much per head for slaughtering? Yes.

1308. How much do you charge for cattle? 1s. per head.

1309. Calves? 9d.

1310. Pigs? 6d.

1311. Sheep? 1d.

1312. Did you, at any time in the history of the abattoirs, since your connection with them, lease the slaughter-houses to the carcass butchers? No.

1313. Are there any slaughter-houses other than the Corporation slaughter-houses in which meat is being killed for the supply of Melbourne and its suburbs? Not in the City of Melbourne.

1314. But have you got any within convenient distance of your own abattoirs? Not any belonging to the City Council, but there are some private abattoirs.

1315. How far are they from the Corporation abattoirs? About 2½ miles.

1316. Are they under any supervision? Very slight, if any.

1317. What supervision are those abattoirs supposed to be under? There are fourteen of them altogether, and there is a nuisance inspector who has other duties to perform, and who just calls at the abattoirs now and again.

1318. And the way in which he performs his duties, you think, judging by your experience, it would be perfectly impossible for him to detect disease in the animals that are killed at those private abattoirs? He does not see one quarter of them killed.

1319. Then it would really be a payable thing for butchers who desired to slaughter cattle that were not exactly fit for human consumption, and were likely to be condemned in your abattoirs, or any other place under your jurisdiction, to send them to those private slaughter-houses? Certainly. They never come through our cattle-yards, but go direct to those private slaughter-houses.

1320. So, then, those diseased animals which we saw hanging up in the Corporation abattoirs to-day, and which the Committee and the other visitors with them considered were unfit for food, would, if they had been sent to private abattoirs probably have passed into the Melbourne meat-market for human consumption? In all likelihood, if the butchers so wished. There would be no one to check them.

1321. In the event of your condemning cattle, who suffers the loss? The butchers; but I should like to point out that in the outside private abattoirs there are some butchers as respectable as any of our men in the city abattoirs, and who would only pass good meat into consumption; but there are other men slaughtering outside who dare not come to the city abattoirs for the purpose of killing the class of stuff they get hold of.

1322. I understand you to mean that there are unscrupulous men engaged in the meat trade, who having

J. Robertson. got hold of cattle of a questionable kind, and being suspicious that they were diseased would, rather than suffer the loss of those cattle, send them to the private abattoirs rather than to the corporation abattoirs where there is so much stricter supervision? They will not send them to us if they have the slightest idea there is anything the matter with them. It is not to be expected that a butcher having paid £10 or £12 for a bullock will condemn it himself, when by stripping off the diseased portions he can send the rest of the animal into consumption, and get as much for that meat perhaps as for any other. There must be some independent authority to deal with these things.

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1323. So you are of opinion that it requires legislation of some kind, which will compel all meat to be properly inspected before being killed, and also afterwards, in order to prevent disease or injurious meat from passing into the market for sale? Yes. There is no guarantee for the public except a proper abattoirs inspection. The inspection of live stock, so far as tuberculosis is concerned, is of great value, but it is no guarantee, because diseased cattle will sometimes get past the best man you can possibly employ, without their real condition being detected, and it may be that until they are slaughtered, it is not found out that they are badly diseased—the disease perhaps being generalised right through them.

1324. Would it be possible for an ordinary man such as an inspector of nuisances, who has had no past experience of the meat-killing business, to detect disease in animals either before they were slaughtered or immediately afterwards, more especially in the latter case, if they were handled first by smart unscrupulous butchers? No. I am sure that there are butchers who could dress a beast in such a way that some of the nuisance inspectors would never know that it had been dressed specially to hide anything. It is done so neatly that you would never notice it unless it were pointed out to you.

1325. How many inspectors have you in connection with your own establishment? Two—besides myself.

1326. The men engaged in killing are, I understand, licensed? They are registered.

1327. No man can be employed in killing at your abattoirs until he has been registered by you? No; he cannot commence slaughtering until he has been registered by us.

1328. And if any of the men engaged in your slaughter-houses were found to have been guilty of passing an animal that was afterwards discovered to be diseased, would he be liable to dismissal, or to cancellation of his license? Cancellation of his license, and to be turned out of the abattoirs.

1329. What improvements do you think could be made in regard to your old slaughter-houses;—could they be altered as they are at present without pulling them down and rebuilding them? No. They would have to be pulled down, and rebuilt to make a proper job of them.

1330. Have you ever seen the New South Wales Abattoirs at Glebe Island? No, I have not.

1331. You have not been in New South Wales? No.

1332. Do you have any complaints from the public round about the Corporation Abattoirs in regard to smells or anything of the kind? We have not had any complaints for some years, but I think that five or six years ago there was an agitation for the removal of the abattoirs.

1333. How do you get rid of the whole of the offal that comes from the different animals that are killed? It is all taken to the desiccating works, and made into manure.

1334. After you have converted the substance into manure, what becomes of the refuse—is there any left? There is none left.

1335. What process do you put the blood through to deduct all that is good from it, and send the remaining liquid away? I cannot explain that properly to you; it is more an engineer's matter.

1336. What do you do with the blood as it comes from the beasts? It is baled out of the pits in the first instance, taken round to the desiccating works in trucks, taken up by a lift, and emptied into the cylinders on the top.

1337. Where did that blood come from which we saw running into the Saltwater River—was that simply the scourgings from the slaughter-houses? From washing down the carcasses of beef, and also the slaughtering places after the men have finished slaughtering.

1338. Do you find that the river becomes polluted in any way by what falls into it? No, it cannot become polluted, because no solid matter can possibly get down from our place to the river, but only water stained with blood.

1339. You cannot notice any discoloration 20 or 30 yards away from where the water stained with blood pours into the river? No; and you cannot trace it very far down the river. You can only see it just on the margin where it runs in.

1340. Is any matter that comes down slaughter-houses noticeable far down the river? I do not think you could trace it 200 yards down.

1341. And supposing there were no other establishment, excepting the abattoirs, in close proximity to the Saltwater River, do you think that anything coming from the abattoirs would be likely to interfere with the cleanliness of the river? Not in the slightest, and I am sure that if nothing more solid went into the river, there would be no objection taken by any one.

1342. Your opinion is that the best place for an abattoir to be built, and to be rendered as little objectionable as possible, is in close proximity to some running stream? Yes; but I do not think it is a good thing to have the drainage from abattoirs running into a fresh-water stream.

1343. You think it would be objectionable to have your drainage falling into a fresh-water stream? Well, it would depend on the stream, and if it were likely to be used for any purposes, such as cooking purposes. In this case I do not think it would be right to let the drainage go into the stream, but it would not cause any nuisance.

1344. What used to become of the stuff, such as you now convert into manure? About eight or ten years ago or more the solid matter used to be carted into the paddocks—or, at any rate, most of it—and there buried in trenches about 18 inches or 2 feet below the surface, hot lime being put immediately on the top of the blood.

1345. How is the other refuse from the different animals taken from your premises to the different boiling-down establishments? That is all carted away to different factories.

1346. The whole of the entrails go into the desiccating works? Yes; everything except what is to be used for human consumption.

1347. So that nothing objectionable goes away from the abattoirs? No.

1348. The whole of the other is converted into manure? People come for runners—the small intestines of the sheep and cattle—to be used in sausage-making. That is the only thing that goes out.

1349. How do they convey them from the abattoirs? They are put into bags, and have to be taken twice a day from the abattoirs in cars.

1350. There is no objection on the part of the public to anything coming from the abattoirs, either on account of smell or otherwise? None at all. I am particularly careful to see that the bags and cars are kept well washed. J. Robertson.  
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1351. What is your idea about the cartage question—do you not think that your method of carting the dead meat from the abattoirs to the meat market is somewhat out of date? Yes; I think the method could be very much improved on.

1352. Do you not think that it could be wonderfully improved on if you had a siding connecting the abattoirs with the railway, and if the meat were conveyed in cool chambers to the central meat market? There is no question about that, and I believe that if it were possible, owing to there being plenty of hanging accommodation, there ought to be a by-law that no meat should be allowed to be taken out of the abattoirs until it was properly cooled and set. If meat immediately after being slaughtered is jagged about here and there, it will not become properly set nor keep.

1353. So your opinion is that, attached to every well-conducted abattoir, there ought to be alongside it a cool chamber in which meat can be hung up until it is thoroughly cooled and properly set? Yes; it ought to be at any rate twelve hours in a place where it would set—in a cool chamber, not a freezing chamber, to set it properly. The butchers here like to run it in hot, so as not to lose weight on the sheep and cattle. A sheep would lose about 2 lb., and a carcass of beef would lose about 14 lb. In the old country where meat is about three times the price it is here, no meat is allowed to be carted and jagged about until it is properly set.

1354. That is the rule in the old country? Yes; and it is carried out strictly in most of the public abattoirs.

1355. How do your abattoirs here, generally speaking, compare with those in which you were accustomed to work in Aberdeen? Well, the mutton-houses and pig-places are better than any I have seen elsewhere.

1356. That is, your newly-constructed pig-houses? Yes.

1357. Those were designed, I suppose, by some architect attached to the Corporation? Yes.

1358. Acting on suggestions, I suppose, from yourself, and your officials? Yes; he got some practical hints from us when he was drawing the plans.

1359. How far do you think your abattoirs are from the General Post Office? About 3 miles, or a little over.

1360. Are the men engaged at your abattoirs under the control and in the employ of the Corporation of Melbourne? The men who do the cleansing are, but not the slaughtermen. The carpenters, paviors, and labourers are all Corporation men.

1361. The whole of the hands engaged at the abattoirs, with the exception of those employed in killing and dressing the meat are in the employ of the Corporation? Yes.

1362. The same remark applies to the hands employed at the sale-yards? The labourers there who do the cleansing are all Corporation men.

1363. You find that that is more conducive to cleanliness than if the men were allowed to be in the employ, say, of the butchers? Yes; you could not keep the place up to the mark, unless you had them directly under your own control, and there would be continual rows.

1364. So you think it is far preferable for any corporation or Government to charge so much per head for the slaughtering of cattle and other animals rather than to let the slaughter-houses at an annual rental? I certainly do. With the exception of the new pig-place the slaughtermen have to do all the cleansing inside. Every man, directly he has done his slaughtering, has to wash down his place and lime-wash the walls.

1365. One of your regulations, I suppose, is that these men have to keep their respective slaughter-houses in a cleanly condition? That is so. We do all the cleansing outside, and they have to do it inside.

1366. When an animal is condemned at the abattoirs, do you lose sight of it at all, or do you see that it is at once conveyed away and put beyond the reach of human consumption? When animals are condemned at the city abattoirs, they have, in accordance with the Health Act, to hang forty-eight hours. They must not be removed unless with the consent of the owner. When we have done with them and are going to send them to the boiling-down, they are cut down, all scored, and thoroughly saturated with kerosene, and then boiled down on our own reserve.

1367. Do you think it would be very injurious to cattle if they were brought down in railway trucks from the country and then put into the sale-yards, and after being sold there, were retrucked and taken 5 or 6 miles on the railway;—do you think that by retrucking them the meat would be very much injured? Of course it knocks them about to a certain extent—the shunting and one thing and another bruises them—and the more they are knocked about the longer they are before they get settled down into a cool condition.

1368. Supposing that you discover at the sale-yards an animal that you think is diseased, what steps do you take to find out whether it is or is not diseased? In the sale-yards each Wednesday I go through all the cattle, and the cattle that I suspect of being diseased are seized to be slaughtered at our city abattoirs under supervision. If they happen to prove fit for human consumption, the agent for them is allowed to take them and do what he thinks fit with them. On the other hand, if they are condemned, they are treated the same as if they were detected and condemned in the city abattoirs. Any proceeds derived from the sale of the hide and carcass are handed over to the agent.

1369. You send the condemned animals to the nearest boiling-down establishment? Our boiling-down is in connection with the abattoirs, at the Saltwater River. The carcasses are weighed before they are sent away, and booked to the different agents, and at the end of each month I have the returns for the carcasses and also for the hides and the fat. If there is anything over after paying expenses it is handed to the agents from whom the cattle had been seized.

1370. Do you have as rigid an inspection of mutton at the abattoirs as you have of beef? Yes; but mutton does not require as severe an inspection as beef. Tuberculosis is rare in sheep, but they have fluke very frequently, and hydatids are very common, but anthrax is very rare. As far as fluke in sheep is concerned, unless the sheep become emaciated and dropsical, they are fit for human consumption. Fluke is very seldom found anywhere but in the livers.

1371. How much per ton do you get for the manure? Three pounds or £3 5s., I think.

1372. Is there a good demand for it? Yes.

J. Robertson. 1373. Is the supply equal to the demand? Yes, generally; but I think that just now the engineer is selling more than he is making. It goes just as the farmers and the gardeners want it, according to the season.  
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1374. Sometimes there is a rush for it, and at other times you have some left on hand? Yes.

1375. *Mr. Wilks.*] In regard to the cattle sale-yards, the present objection in connection with them is to the intersecting road—Epsom Road? Yes.

1376. In a perfect sale-yards that should be removed? Well, the cattle ought to be taken across without having any chance of breaking away. It would not matter about the road being there, but there should be some sort of culvert, or something else, so that the cattle could be taken from the sale-yards to the abattoirs without any chance of breaking away.

1377. That is owing to many cattle being in a wild state when they arrive here? Yes; and they may break away and do a great deal of damage.

1378. The wild nature of Australian cattle is a very common feature? Yes. Cattle when shunted about on the railways are more or less wild.

1379. Are you aware that in America people are not allowed to travel stock such a long distance as people here do? I am not aware of that.

1380. But you can see the wisdom of that? I certainly do. If you travel cattle on rail, or on foot, for about a week, they get knocked about so much that if you keep them they will not feed, drink, or do anything else for about a week, and become very hardened, and waste away. When you slaughter them you can see how much the kidney fats and the fat around the intestines have wasted away.

1381. That meat, I suppose, is detrimental to the public health? I would not say that; but it becomes hard, tough, and muscular meat, almost as dark as your coat, if the beast has been travelled very much. In the case of cattle that have travelled and been knocked about, and have been killed in a fevered state, the flesh is always very muscular and dark in colour, and when killed is very tough.

1382. When cattle arrive at the sale-yards, do they take readily to food? A lot of them will not take readily to food. Quiet cattle accustomed to be fed will do so. I have seen cattle come into the yards which would not even go near the water-trough to drink.

1383. So the only practical use of the yards after all is to let them rest? Yes; and there is not a great deal of rest. The cattle are brought in on Wednesday night from 10 or 12 o'clock right up to the next morning.

1384. Is that rest sufficient to reduce the inflamed state? It does settle them down a bit, but directly daylight appears the different agents and drovers are amongst them again, stirring them up and classing them, and putting them into different pens—tops, seconds, and so on; and there is a lot of rushing about then, and in a few hours it is time to sell them, and there is another rushing and stirring about, for the butchers to see them in the pens, and directly they are sold, and the agent is out of the lane, the butchers are at them again, drafting them out and taking them into the big yards; therefore, they are kept in a continual swing almost the whole time they are there.

1385. The system which you have, in regard to slaughtermen having to report any diseased meat that may escape you, practically makes them additional inspectors? It does; but it is not meant for meat that may escape me. You cannot, however, be in all the pens at once, and this restriction was put on the butchers, so that they cannot remove anything until we come in. Supposing there is the least adhesion of lungs, pleurisy, or anything they notice wrong, they have to stop dressing at once, and must not go on with the dressing until I see it. This makes them inspectors in a certain way.

1386. In the absence of a stipulation like that, you would have to increase your number of inspectors? Yes. I understand that that is one difference between Glebe Island and the abattoirs here. Your meat is just slaughtered and taken away, and you must have a large staff of inspectors to see it at once and let it go, but none of the beef killed (say) to-day at our abattoirs is allowed to go out until to-morrow morning, no matter what time to-day it may be killed.

1387. Condemned carcasses you saturate with kerosene, and then take them to your own boiling-down establishment? The boiling-down establishment does not belong to the Corporation, although it is within their ground. It belongs to two of the butchers.

1388. They simply treat diseased meat? Yes; the refuse from their own private shops.

1389. By independent machinery? Yes.

1390. Therefore, you do not know whether it is or is not payable? I think it is payable enough.

1391. They treat so many carcasses that it is really payable? All the cattle that get down in the trains, and are killed or very much bruised, and also all the sheep that are smothered in travelling on the railway, are taken there and boiled down.

1392. Do you approve of the present method of killing cattle by spearing? It is the best we can possibly have at our abattoirs, but I believe in shooting if the place is adapted for it.

1393. What are your reasons for preferring shooting—is it more humane? Yes; that is the point of view from which I look at it. A man would scarcely ever miss cattle with a gun, but in spearing you do sometimes miss, and that means that you are apt to miss two or three times when the beast goes about, and unless you can get it in a proper position, so as to hit the spine between the two cups, the beast will not fall—he will not fall unless you hit and sever the spinal cord. However, such a miss very seldom occurs. But, if the slaughterman wishes to put down four cattle, the first one that is speared down lies there until the others have been speared down, and they lie there and breathe and yawn—for the beasts are only in a stunned condition—until the spinal cord is absolutely cut at the back of the neck.

1394. What extra arrangements would you require to carry out the more humane system of shooting? I am afraid it could not be carried out at our present abattoirs.

1395. From want of space you could not carry it out there? Yes. Bullets would be flying back off the walls. I know that in America shooting is an operation in almost all the large slaughter-houses, and is approved of.

1396. As to the effect of sending diseased meat on to the market, do you think that there are any complaints which are traceable to the consumption of diseased meat, or is that idea merely a matter of sentiment? I think that people have justification for it.

1397. Are you aware of any complaints that can be traced to the consumption of diseased meat? You cannot trace them directly, although everything goes to prove it. You cannot experiment on human beings with diseased meat, but you can experiment on pigs, dogs, fowls, guinea-pigs, or any other animal into which you can either inoculate the disease into or give it in food. 1398.

1398. The greatest compliment which you have to the rigidity of your inspection is that so many other slaughter-houses have been started? Yes; they have sprung up like mushrooms the last year or two. They have always existed, but they are now about double what they were. J. Robertson.  
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1399. That is proof that you are very particular in inspection? Yes. For instance, I know one butcher who killed about twenty head of cattle on one occasion, of which three were condemned by me. He was very dissatisfied about the condemnation of the cattle, which were diseased with tuberculosis, and he brought down the health officer of his own borough to see them. The doctor told him at once that he had not a leg to stand upon—that the disease was thoroughly generalised through them. Within three days that butcher “cleared out” of our abattoirs, and I think that is clear proof of what he went for.

1400. You would favour legislation in the direction of providing that within a certain distance of the city no slaughtering should be done except in the Corporation Abattoirs? An abattoir under proper inspection.

1401. But abattoirs are so costly that we may say the city abattoirs? Each small place cannot afford to have inspection. It would require one man for each private slaughter-house, and they could not possibly pay a man to stop there to inspect the meat.

1402. And, further, the scientific appliances required would increase the costliness of the abattoirs? Yes.

1403. What effect has the rigidity of your inspection on the slaughtermen;—do they feel inclined to leave you? No; the slaughtermen are very pleased to have the restrictions put on them. Before these special rules were passed, if a slaughterman happened to go and inform the inspector of anything being wrong, and the master butcher found it out, that man had to go. The men were really afraid; but, directly the restrictions were put upon them, they came at once, without the slightest fear, and they rather like the restrictions.

1404. Is it a fact that sometimes master butchers leave your abattoirs owing to the rigidity of your inspection? Yes.

1405. The desiccating plant is a main essential of an abattoir? If there is no other way of getting rid of the offal it is a main essential. Whenever there is a demand for the manure, and it will pay, that is the best method of dealing with the offal.

1406. In the early period of the operations of your abattoirs you dealt with the offal by burying it? Yes.

1407. Was that a very expensive method? No, it was not; but it is not a method to be recommended.

1408. On what grounds? Sanitary grounds. It is bad, even if you bury the offal 2 feet, because if you put in ten or twenty loads of sheep-paunches the gas is sure to break out through the top.

1409. And it makes a malaria? Yes.

1410. The occupation of a slaughterman is not an unhealthy one? No; it is not.

1411. You spoke about manure manufactured by the desiccating plant;—in this city it has to compete with manure obtained by desiccating night-soil? Yes.

1412. And the competition has a tendency to keep the price down? That and other manures from other places have a tendency to do that; but I think that, since the local market has been established for our manure, it is going on first-rate.

1413. A very heavy expense in connection with your abattoirs is owing to your being compelled to purchase Yan Yean water? Yes.

1414. If your abattoirs were in a position similar to Glebe Island, and you had abundance of water around you, there would be a great saving? Salt-water is of no use for washing meat or for drinking purposes.

1415. But I mean for cleansing purposes? It is fit for that. We use a lot of water for cleansing purposes; the cost goes into hundreds of pounds.

1416. Do you make any use at all of the salt-water river for such purposes? None at all. We simply use the Yan Yean water.

1417. The obnoxious smells that some people attribute to the abattoirs are mainly owing to the surrounding boiling-down establishments? Yes; there are a lot of establishments about 200 or 300 yards from the abattoirs—boiling-downs, fellmongering, and other establishments.

1418. And when visitors to the Flemington Racecourse complain of obnoxious smells, which they think come from the abattoirs, those are really coming from the surrounding noxious trades? Yes. No smell can come from the abattoirs, for no blood or offal is allowed to remain there until it would smell. As the pits become full they are emptied, and the contents are placed in trucks and taken away.

1419. The regulation that you have making the slaughtermen responsible for cleansing the premises before leaving is a very useful regulation? Yes; they have to wash everything down.

1420. Have you heard any complaints from carcass butchers in regard to the position of their pens? I have heard some, but very slight; there is not much advantage to be gained as to position at the abattoirs. You will hear more of that in regard to the dead meat market, to which people go to purchase meat.

1421. You obviate any difficulty by changing occasionally? Yes. Sometimes a man may hold two pens in connection with which there might be a slight advantage; his trade goes down perhaps about one-half; another man comes in and does about twice as much as that man, and I remove him at once, and put the man doing the most trade in the most convenient pens.

1422. What is your opinion in regard to the suggested improvements in reference to the conveyances for carrying the carcasses of meat to market? They ought to be properly closed.

1423. Something after the style of Bennett's meat-van which we saw? That is a very heavy, clumsy thing, and some of the butchers would not be able to have vans like that.

1424. You mean that for an average butcher they would be too expensive? Yes; and they are too cumbersome. One horse and a light trap would take about as much as two horses will draw in that van.

1425. Is the objection to carting meat to the city in the present ordinary way merely sentimental, or is it practical? It is practical. When there is a hot, windy day, and dust and horse-manure are being blown about, it would be useful to strictly require the conveyance of the meat in proper vans.

1426. In regard to the local consumption of meat, to which would you give preference—chilled meat or the ordinary slaughtered? Ordinary slaughtered meat.

1427. For what reason? I can always tell chilled or frozen meat from other meat. Chilled meat has a peculiar taste to me.

1428. Chilled meat? Yes. They chill it almost to freezing point.

1429. What about the chilled meat simply? Well, meat chilled, so long as it is not frozen, is a profitable meat to hold. It should not be eaten under one or two days at the very earliest—from two to three days is better.

- J. Robertson. 1430. Your previous answers were more in regard to frozen meat? Yes.
1431. How do you detect that? By the taste, the feel, and the colour. Frozen meat keeps no time after it has cooled down.
1432. It is not such a healthy food as ordinarily-slaughtered meat? I cannot speak from a health point of view; but I am quite sure that chilled meat is far preferable to frozen.
1433. And either chilled or ordinarily-slaughtered meat would be more saleable than frozen meat? Yes, in any city; but the great objection here is that they use meat before it is actually cool, and that meat is never good; it is tough.
1434. That lessens the market value of it? Yes. About one of the worst things is carting and jaggling about meat in cutting it up before it is properly set; it is always very tough.
1435. Does a railway connection run right into your sale-yards? No.
1436. The cattle have to be driven a certain distance? 200 or 300 yards.
1437. Is there a proper cattle-driving track reserved for that alone? Not altogether; there is other traffic on it.
1438. You had no previous experience in the control of abattoirs? No such experience until I came here.
1439. But you had practical knowledge as a wholesale butcher in the old country? Yes.
1440. And you know the supervision that there is in Aberdeen? Yes.
1441. It is a rigid inspection? They are more strict now; but when I was there the inspection was not half as strict as it is here. Neither was it in any part of England.
1442. How many years ago? Between thirteen and fourteen years. The inspection of meat there was almost nil.
1443. The most solid suggestion for the improvement of your abattoirs would be to put all the cattle slaughter-houses in the same condition as the pig and sheep houses? Yes; quite different altogether from the old places we have got. They were right enough in their day, when there were only a few killed in each pen, but they do not do when there is a lot to kill.
1444. Have you ever heard of a system of putting cattle in a certain position, so that they can be killed very rapidly one after the other? Yes; that is an American system; but we would want so much space that I do not think it is likely to come into force here.
1445. But space is of no consideration in a country like this? I mean that we should want a lot of space in building. In shooting cattle they are all run up into stalls, and a man walks along in front of them, and puts them down as he goes along—rows of them.
1446. It is not the public who complain about the inferior meat? Not so much. They do not seem to care so much about it, with the exception of a few.
1447. It is only the municipal authorities who, acting in the interests of public health, recognise the dangers of which the consumers are ignorant? That is it. The consumers do not appear to take very much interest in it.
1448. Therefore you consider that municipal control should exist? Yes.
1449. Have you any idea of a State department having the control of it? No.
1450. You consider that the municipal authorities are not amenable to any "ringing" operations? What I have noticed is that they always appear to manage this sort of matters better than a Government.
1451. To what is that owing—is it because they have more commercial men in their ranks? I cannot tell you the reason, but the municipal establishment is kept cleaner and under stricter regulations.
1452. *Mr. Law.*] Is it usual to kill cattle and skin them in sight of bullocks awaiting slaughter? Yes.
1453. That is the course of procedure always adopted? Yes; they can look in, but they do not take any notice of what is going on. If ever we had new beef-abattoirs erected we should have the cattle taken through a narrow crush into the pithing-pen, but not over any blood-drains. Now they often come to a drain and put down their head and smell the blood, and some of the cattle are so stubborn that it takes perhaps a quarter of an hour to drive them into the pen.
1454. But you have some gates that you could close between the pithing-pens and the cattle awaiting slaughter? When in the pithing-pen they are alright, but sometimes in getting them in they will turn round and round.
1455. What is the area of the abattoirs? I believe that the abattoirs and the cattle sale-yards are altogether 85 acres.
1456. Is that the total area of the cattle, sheep, and pig yards, and the abattoirs combined? Yes.
1457. In regard to the manufacture of manure, you told the Chairman that it was a certain price now; but I understand that some time ago it was nearly double that price? I believe that it was sold by contract one year at £5 15s., and another year at £5 17s. 6d. per ton.
1458. Has the price gone up and down? No; the manure was sent to the Mauritius then.
1459. What distance are the abattoirs from the railway? About three quarters of a mile.
1460. The Chairman asked you if there was any agitation, and you said "Yes." I should like to know what the agitation was about; it is some time ago, I think, since it occurred? Five or six years ago, or perhaps more.
1461. I believe that since then the very people who got up the agitation for the removal of the abattoirs are now clamouring for their retention where they are? Yes.
1462. That is, the people in the vicinity, and of the metropolitan area generally, are satisfied for the abattoirs to remain where they are? Yes.
1463. Are you in favour of the abattoirs being under municipal control or State control? Under the management of the council.
1464. Do you think it would be preferable to have the whole of the meat-killing for the Colony done at one central depôt, or allow the suburbs to have private slaughter-houses? I do not believe in private slaughter-houses, although it might be considered unfair to have all the meat-killing done at one place. Private slaughter-houses are no good at all, from any point of view.
1465. Do you think that the meat-killing could be more economically managed and be under greater supervision if it were all done at one central depôt? Yes, there is no question about that; and it would be fairer to all the butchers and the public too.
1466. Can you tell me what is the total number of bullocks killed annually at your abattoirs? We kill on an average about 800 a week.

1467. In regard to the diseased animals which you showed us to-day, part of the beasts, if they had not been seized by you, might have been made into sausages? Yes. J. Robertson.  
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1468. Are such parts ever utilised in the manufacture of sausages? Certainly not from our abattoirs.
1469. Are any blow-flies ever seen at your abattoirs? I have never seen blown meat in our abattoirs.
1470. But have you ever seen blow-flies there? Very, very few. They go to slaughter-houses where a few beasts and sheep are killed each week, and the hides and paunches and sometimes the dead carcasses of beasts are left lying about, and you can see thousands of blow-flies there.
1471. What is your opinion in regard to the effect of the abattoirs on the health of the employees there, and of the people living in the vicinity;—do you think it is beneficial to them? I cannot say that it is beneficial, but I am quite sure that it is not detrimental.
1472. You stated that there was a great deal of difference between bullocks killed after having been driven a long distance and those brought in from the vicinity of the abattoirs? Yes.
1473. The one, I suppose, is in a highly-heated state in comparison with the other? Yes.
1474. Supposing that a bullock was driven 50 miles to your abattoirs, and another was driven 5 miles, and they were both killed at your abattoirs, and a fore-quarter of each bullock was brought into the city and hung up in a shop,—could you tell which fore-quarter belonged to the bullock that had been driven 50 miles, and which fore-quarter belonged to the bullock that had been driven 5 miles? I should not like to say that I could do that, but I can tell any beast that has been travelled any distance by the colour of the flesh, and the small veins that you will see all over the carcass.
1475. You are an experienced hand, and yet you could not tell the difference? I would not say I could.
1476. *Mr. Bavister*] Are sheep and cattle much injured, in trucking, in transit, and in untrucking, on the railway lines? Yes.
1477. What percentage are killed, or are so much bruised and injured, as to be unfit for human consumption? I do not think 1 per cent.
1478. What percentage of cattle sold at the sale-yards are condemned before slaughtering? There may be 2 per cent. But many of the cattle seized at the sale-yards, and not absolutely condemned then, pass through afterwards. More pass through than are absolutely condemned.
1479. So the percentage condemned after slaughtering is not so great as the percentage condemned before slaughtering? It is more after slaughtering.
1480. *Chairman*.] Do you think that the present site of the abattoirs is sufficiently large to permit of the erection of an increased number of slaughter-houses, so that the whole of the meat now killed at the Corporation abattoirs, as well as at the private establishments close by, could be killed at the Corporation slaughter-houses, and be killed under your own or some other skilful supervision? Yes, there is plenty of room. If the council were pressed for ground on the abattoirs' reserve through an extension of the abattoirs they could get over that difficulty by not letting the cattle-yards, and making use of the large cattle-yards for cattle awaiting slaughter.
1481. Do you think it would be a good thing to introduce a by-law in connection with the slaughter-yards to prevent cattle from being slaughtered there, unless they were previously sent to the Corporation sale-yards to be sold? That could not be done without an amendment of the present Act.
1482. You think it would be conducive to the well-being and health of the public if all the abattoirs were placed under proper supervision? Yes; and I am quite sure that there are a lot of butchers slaughtering outside the city abattoirs who would be very glad if legislation of that sort came into force, so that the private abattoirs could be brought under proper supervision, because I know that directly they all come under proper supervision the butchers will stand out for a rebate from the owners of stock that is condemned.
1483. So that bringing all the slaughter-houses to one spot, where some official with a properly-organised staff could supervise them, would have the effect of preventing absolute loss to the butchers when cattle are condemned? Yes, I am sure of that, once they all come under one regulation.
1484. There would be no chance then of butchers getting diseased cattle away and making use of them, so as to prevent possible loss, because by their united action they could insist, as a condition of sale, on a rebate being given if the animals after they purchased them were found to be diseased? Yes. Some time ago the butchers slaughtering at the city abattoirs had some meetings to get a rebate on cattle that were condemned. The matter, however, fell through, owing to the men slaughtering outside the city taking no interest in it.
1485. So that, under the present regulations affecting the slaughtering of cattle, and their condemnation if they are found to be diseased, if any slaughter-man goes out of his way to inform the authorities that he has met with a diseased animal in killing it his situation is placed in jeopardy, simply on account of the master-butcher having to suffer the whole of the loss if an animal that is killed happens to be condemned? That is so.
1486. *Mr. Wilks*] Have you any fixed hours for slaughtering? Yes.
1487. What are they? From 5 o'clock in the morning until 10 o'clock at night.
1488. Can you suggest any improvement, or are you satisfied with those hours? They work very satisfactorily. Sometimes in the summer time, and in an exceptional state of the weather, the butchers are granted permission to slaughter during a few hours on Sunday. They have to get the consent of the Town Clerk.
1489. What would be the reason for that exception—a strong demand for meat? No. The reason is, that the people at the private slaughtering-houses can slaughter on Sunday, and if our men did not do so they would lose about one day's trade in the market in a week.
1490. That is another objection—that private enterprise forces you into Sunday slaughtering? Yes. There is not the slightest necessity for Sunday slaughtering. That is one great objection that I have to private slaughter-houses. People can deliver cattle there all day on Sunday, and there are no restrictions as to the hours of slaughtering. They just do as they like, with the exception of the Richmond abattoirs.

TUESDAY, 29 SEPTEMBER, 1896.

[The Committee met at the Newport Freezing Works.]

Present:—

Mr. BAVISTER, | Mr. LAW,  
                  | MR. WILKS.

J. S. HAWTHORNE, ESQ., IN THE CHAIR.

John Maggs examined:—

- G. Maggs. 1491. *Chairman.*] What is your position in connection with these works? Clerk in charge.  
 29 Sept., 1896. 1492. Have you been engaged here long? About two years.  
 1493. What are your duties principally? I look after all the weighing and the shipping portion of the business.  
 1494. Have you anything to do with the killing portion of the business? No; there is a foreman slaughterman.  
 1495. How long have these works been in existence? About nine years.  
 1496. What was the company started principally for? For exporting frozen mutton.  
 1497. You confine yourself to the exportation of mutton? Yes.  
 1498. You do not touch beef? No; we do not touch beef.  
 1499. Do you find that the works prove offensive to the surrounding district? No; I do not think so. They are very free from smell. All the blood and offal are taken away after the day's killing.  
 1500. Do you reduce the offal to manure? No; we simply boil it down, and it is taken away to a farm.  
 1501. Have you a farm of your own? No.  
 1502. Do you sell the offal? No; it is simply carted away.  
 1503. You make it a present to those who cart it away? Yes.  
 1504. How far are you from the nearest shipping port? Williamstown is only 2 miles away; but we generally ship at Port Melbourne.  
 1505. How far is Port Melbourne away? Twelve or 13 miles.  
 1506. The railway trucks are drawn in close alongside the works? Yes; close alongside the chambers.  
 1507. Roughly speaking, how many sheep do you kill for export in a month? We are killing 20,000 a month—that is, for about nine months.  
 1508. What would be your annual average? Taking it right through the year, I think it would be about 4,000 a week.  
 1509. How is the stock brought to you;—by rail? Yes, by rail—brought right to the landing-stage at the works.  
 1510. There is nothing really driven? Only a few sheep we buy at Newmarket. That is the only place they are driven from.  
 1511. From where do you get your stock principally? Riverina—around Albury, and so on.  
 1512. New South Wales territory? Yes.  
 1513. How many hands do you employ here? I suppose we have about forty-five.  
 1514. Are you under Government supervision in any way? No. Of course the meat is inspected by a Government medical man. Each separate day's killing is always inspected before we export it.  
 1515. Is a Government officer always on the premises? He comes down every day.  
 1516. He is not stationed here? No.  
 1517. Has he fixed hours for inspection? No—at any time.  
 1518. If you were to meet with diseased sheep in slaughtering, would it be possible for you to dress them up for export without his detecting them? No; he comes here every day. He never misses a day.  
 1519. And he looks at every sheep? Not exactly. He looks at them in passing generally, as they are hanging up, and then looks at all the livers.  
 1520. What percentage would you reckon on for diseased sheep that would have to be condemned? In some lines there might be 2 per cent., and in others more. He rejects sheep more for bruises than for anything else.  
 1521. You do not detect much disease in your sheep? No; very rarely.  
 1522. Two per cent. would really be about a fair thing to assume, and that principally the result of bruises? Yes; getting down in the trucks coming down and being trodden upon.  
 1523. Have you any supervision over you in regard to cleanness? The Williamstown nuisance inspector comes round about once a week, and looks all over the place.  
 1524. So that if filth were allowed to accumulate the municipal officer from Williamstown would not only be able to discover it, but also be empowered to summon you and get you fined? Yes; he would. The blood is kept in a small channel, from which it is taken away. It is prevented from running out of the channel by a flow of hot water at one end, which keeps it back. Blood will not mix with hot water. Only a little coloured water runs to the sea, and although people have complained, there is no nuisance connected with it.  
 1525. What do you do with the blood? It is taken to Footscray, and converted into manure.  
 1526. So that there is really nothing objectionable either in the shape of solids or liquids coming from the slaughter-houses? Nothing whatever.  
 1527. *Mr. Wilks.*] Have you any acquaintance with the Melbourne storage in the Flinders-street markets? I have been there many a time.  
 1528. What is your opinion as regards the appliances there as compared with yours? They are much superiors to ours. They are up to date, whereas our machines are twenty years old. They can do 2,000 or more sheep a day, and we can do 1,000.  
 1529. And those are the appliances you would recommend to be copied? Yes; they have all the improvements.  
 1530. How is it you do not treat beef—it does not pay, I suppose? No; it is not profitable. No beef has been sent from these works for some years.



W. Strong. 1571. Do you think that the abattoirs interfere at all with the beauty or cleanliness of the Saltwater River close alongside? No; it does not interfere with it in the least. There are catch-pits, so that, as the blood and other matter pass along, the sediment is all caught, and what gets away hardly colours the water.

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1572. The whole of the offal, instead of being buried, as I understand it was previously, is now treated at the desiccating works, and converted into a marketable manure? Exactly.

1573. Do you think that the present killing business in and around Melbourne is of a satisfactory character? In Melbourne it is fairly satisfactory, as far as we can make it satisfactory. Of course it is not perfect even here; but as far as Melbourne is concerned, I think it is as satisfactory as it can be made at present. The Melbourne Corporation abattoirs supply about half of the meat consumed in the city; but the outside abattoirs are not under any proper supervision, and consequently meat not suitable for human consumption is oftentimes allowed to pass. Immediately beyond our abattoirs, in Braybrook alone, there are, I understand, about fifteen places where meat is killed, and in a recent report on those abattoirs it was stated that there no means for their proper supervision are in operation, and consequently meat that is not fit for human consumption passes through those places. Only a few days ago one beast was exposed for sale in our own market, which had come from one of those places, and it was so bad that the Magistrate fined the party exposing it for sale £10 and £3 3s. costs.

1574. That animal was slaughtered at one of the private slaughter-houses, where there is no supervision by Corporation officers? Exactly.

1575. A beast of the description mentioned could not find its way into the market if it were slaughtered at the Corporation slaughter-houses? No. You will find from the rules that each slaughterman, as soon as he finds anything wrong with a beast, is bound to report the fact to the superintendent, who inspects it, and decides whether it is or is not fit for human consumption. Therefore there is no possibility of meat unfit for human consumption going out of our abattoirs. As soon as a beast is found to be in that state it is marked with a large cross on the side, and is put aside, and afterwards cut up and desiccated.

1576. So that once meat is condemned at the Corporation abattoirs there is no possibility of its finding its way into the market for sale? No. It never gets out of the control of the superintendent until he disposes of it in the way I have mentioned.

1577. Have your sale-yards always been in as close proximity to the abattoirs as they are at present? For very many years they have. A long time ago we had them in North Melbourne, but for very many years they have been where they are now.

1578. They are close enough now to the abattoirs to prevent the possibility of injury to the cattle in driving, or of injury to the public by cattle getting away and running through the public thoroughfares? You doubtless noticed that the abattoirs' ground and the cattle sale-yards almost adjoin each other, so there is no difficulty whatever.

1579. The only public property separating them is a small roadway—Epsom Road? Yes.

1580. With the exception of that 66-foot road, they adjoin each other? Exactly.

1581. So that there is scarcely any possibility of danger from cattle-driving? No. I may also say that there is a movement on foot in favour of, and it is considered advisable, that a siding from the railway should be run into the cattle-yards, so that the cattle may be trucked right into the cattle-yards, and thus avoid any driving of them through Flemington or Kensington. That arrangement will most likely be carried out before long.

1582. So, although the distance is so short, you would truck the cattle right into the cattle-market? Yes; and, perhaps, when money is a little more plentiful, a siding will also be made right into the abattoirs, so that meat can be conveyed by rail to the city.

1583. At present inconvenience is experienced in conveying the meat from the abattoirs to the central meat-market? Yes. In connection with the carriage of meat from the abattoirs to the city we have a regulation that it must be so covered that no dust can get upon it; but sometimes some of the butchers break through that rule, and are fined for doing so. Bennett always uses perfect cars for conveying his meat.

1584. Do you find the cattle sale-yards a profitable investment? They pay very well. We let the sale-yards by tender every year.

1585. Are they let in one lot? Yes; and there is a certain scale of charges beyond which the lessee cannot go.

1586. The lessee is restricted in his charges in respect of all cattle entering the yards? Yes.

1587. And the annual rental which you obtain for the sale-yards is sufficient to pay interest on the capital invested in their erection? Yes.

1588. *Mr. Wilks.*] Have the city abattoirs always been under the control of the City Corporation? Yes.

1589. I suppose you would prefer a continuance of that system rather than that the abattoirs should be under the control of a State Department? I think it is better to have them under the control of the Corporation, more especially as the meat market is under our own inspectors, and it would be undesirable to have a clashing of inspectors.

1590. From your experience, do you think that either the aldermen or the councillors attempt to exercise any patronage in regard to the engagement of the employees? No.

1591. They never attempt to interfere? No.

1592. The establishment is conducted as if were a distinct department? Yes; as if it were a private enterprise. Matters in connection with the abattoirs, as is the case with every other department of the Corporation, are dealt with by a committee; and if anything arises in reference to the working of that department, the committee deal with it. But there is no interference by individual members of the Corporation.

1593. Therefore there is no danger of their making the abattoirs a refuge for their friends? No; the superintendent there is a man well qualified for his position—a man with eighteen or twenty years' experience, who, although not a veterinary surgeon, is so well acquainted with the practical working of the abattoirs that I think no man—not even a specially-trained man—could surpass him in that respect.

1594. Do you think that your rigid system of inspection causes any friction with the consumers—do the general public object to it at all? The consumers are favourable to it; but there is sometimes friction with the butchers. For instance, a number of cattle are exposed for sale; our inspectors visit the cattle-yards, and if they find any beasts there which they think are not up to the mark, they order them at once

to

to be taken to the abattoirs and have them killed; and of course, if they are diseased in any way they are condemned; but many of the butchers, if they find that they have cattle which they think are likely to be condemned in our abattoirs, will go to other abattoirs and have them killed where there is no inspection. W. Strong.  
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1595. Do you think there is any danger of going to extremes with inspection? No.

1596. I mean, making it a fad? No; I do not think so, so far as the Melbourne corporation are concerned. Our inspectors never go to extremes. They absolutely condemn meat only when it is unfit for human consumption. I may mention that we are trying to force the hands of the Board of Health to have the supervision which is necessary over the outside slaughter-houses.

John Clayton examined:—

1597. *Chairman.*] You are town clerk of Melbourne? Yes. J. Clayton.  
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1598. You have been in your present position for some years? Nearly six years.

1599. I suppose that you have a good deal to do with the administration of the abattoirs, as being one of the branches of your corporation departments? As chief executive officer I have to supervise the management of the abattoirs. The superintendent, of course, has the physical management of the establishment, but I have what you may term the clerical management of all arrangements.

1600. You, as the town clerk of Melbourne, have the general supervision of all the abattoirs administration? Yes.

1601. Mr. Robertson, the superintendent, I suppose, and also the engineer and other officials there, have continually to report to you the proceedings in connection with the administration of the abattoirs? Yes, on behalf of the Health and Market Committees of the Council.

1602. The abattoirs are managed by what is called the Health Committee of the City Council? Yes; and the cattle markets by the Market Committee.

1603. Since we saw you yesterday, I believe you have prepared some general information on the administration of the abattoirs—would you be good enough to give it to the members of the Committee? I have a few particulars which I thought would probably be useful to you. First of all I hand you a plan showing the site [*Appendix B1*] of the cattle markets and the abattoirs.

1604. You have no objection to have a copy of this abattoirs plan sent to us, to be attached as an appendix to the Committee's report? I will do so with pleasure. The cattle market site is 24 acres—that is, the small piece on top; the abattoirs site 57 acres. The title is by Crown grant, and it was given to the Council in the year 1857, in exchange for a site which was then owned by it, in Elizabeth-street, which is nearer the city. Under the Abattoirs Act, on the establishment of those abattoirs, it became illegal to have any other slaughtering done anywhere in the city. Part of the city abattoirs, as you saw it yesterday, was the original erection. Speaking roughly, on the cattle markets and the abattoirs reserves we have spent close on £100,000. Of course a good proportion of that expenditure was made in the earlier days when work was more costly. Of the more recent works, the desiccating plant was put up in 1889, and cost about £12,000; the sheep slaughter-houses were opened in 1891, and cost about £10,000; the pig slaughter-houses were opened this year, and cost about £3,000. In addition to that, we have remaining unexpended loan moneys amounting to £25,500, being part of the amount borrowed for renewing the whole establishment, of which we have carried out part, and for extensions. The only difficulty we have there is with regard to the contour of part of the land, which is low lying; and the City Surveyor has prepared plans for filling up the central portion so as to bring it to one useful level—a good draining level.

1605. That is, the low-lying land between the sale-yards and the abattoirs? Yes; it is part of the abattoirs reserve. Then we shall have a good useful fall right to the river. The difficulty which you saw yesterday of moist or wet paddock will be got rid of. The sites are absolutely adjacent, the only separation being a 66 feet road—Epsom Road. You will remember that that road forms a dish with a steep slope from either side. We have in view a plan to bring that road to something like a level, and to make an underground connection between the two reserves, so that practically the cattle will travel from end to end without ever going outside our fences.

1606. So the difficulty that now stands in the way of the perfect administration of the sale-yards and the abattoirs will be got rid of by the construction of a sub-way under the present road dividing the abattoirs and the cattle sale-yards properties? That is it. I may say that there is very little difficulty there, if any. But, at the same time, as the cattle have to cross a public street, there is a possible chance of a wild animal getting away.

1607. So in the near future that slight difficulty will be got rid of? Completely removed.

1608. After the construction of that sub-way the cattle will pass from the sale-yards right on to the abattoirs property? Quite so. The cattle at the present have to be driven to the sale-yards from a railway siding, which is situated about 400 yards away.

1609. Have you not been able to devise any means whereby a siding could be constructed from the main line of railway right into the sale-yards? That matter has been thought out carefully by the Council and the Railway Department, and a plan has been prepared showing a proposed siding. The red lines on the plan show the position of siding.

1610. It is proposed to construct this line so as to remove the difficulty, trouble, and annoyance of driving cattle from the main railway line to the sale-yards? Yes.

1611. I suppose you can let us have a tracing of this plan? Yes. We have also had other plans for a siding prepared to come in from the other side of the ground, our idea being that when the siding is put in it shall not only supply the live stock market, but shall also be connected with the abattoirs, so that the whole of the meat supply will then go straight from the cooling rooms into the centre of the city by rail.

1612. So the present system of cartage will then be entirely abolished? Yes; except so far as anyone may want to continue it for convenience. That also will give us the advantage of connecting our abattoirs with the cold stores, which are now connected with the railway system, and then meat could be slaughtered in our abattoirs, and without any further handling go right through to the cold storage chambers, and thence to the ship. Some years ago there was a local agitation for the removal of the abattoirs, and in this connection I should state that this site of 81 acres, whilst it is surrounded by another

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another municipality, is absolutely, a part of the City of Melbourne, so that it is under our own municipal control in every sense of the word—no other municipality has any control over it in any shape or form.

1613. In the formation of the adjoining municipalities, these 81 acres were kept attached to the City of Melbourne? It is an island, but at the same time it has been proclaimed as part of the city. The agitation was based on one or two reasons, the soundest being the driving of stock from the railway siding into the markets. Another, at that date, was alleged offensiveness. One only ground for this was that a few years previously the offal had to be burned on the site.

1614. Has any agitation taken place since you got rid of that difficulty? No; not to speak of. That was some years ago. The main part of the agitation was because certain interested parties had a desire to have the land cut up and sold. I may say that the best way to describe the state of affairs at the present time is this:—Those who formerly wanted the abattoirs removed are now our strongest supporters for their retention.

1615. So that at the present time there is not, and for some time past there has not been, any agitation on the part of the inhabitants surrounding these places, or from the residents of Flemington, in favour of removing the present abattoirs? No; on the contrary, when a proposition was made about two months ago for an outside municipality to establish central markets and abattoirs within its boundaries, the residents in the neighbourhood of our abattoirs were, as they are now, strong supporters for the retention of the abattoirs where they are now. All nuisance has been removed by the establishment of the desiccating plant, by which everything of a character in the slightest offensive, is treated immediately after it is brought from the beast. It is not allowed to remain, so as to become offensive in any shape or form. It is taken straight from the slaughtering pens into trucks: and thence into the desiccating plant, probably with only the lapse of an hour or two.

1616. Well, within a few hours, at the very outside? Yes; a few hours will cover all the time from the moment that the stuff is taken from the inside of the beast and put into the desiccator. With regard to the liquid refuse, I may say that all the blood, or at any rate as much of it as possible, is saved as being a very valuable by-product, and is utilised in the manufacture of blood manure. The drains are so constructed with silt pits that everything solid is caught, and nothing is allowed to go except what may be termed stained water—the washings down.

1617. So that nothing whatever escapes through the drains into the Saltwater River that could possibly be injurious to the health of the surrounding districts? Nothing at all.

1618. And although the water has the appearance of blood, still, if it is taken up in a small vessel, it is found to be simply discoloured water? That is so, and I do not suppose that it would be noticeable in the river a short distance from the mouth of the drain. The market and abattoir sites are built in on two sides. The cattle market absolutely faces the centre of population, on the north end, and is within 100 yards of the Town Hall of Flemington and Kensington, and is separated from the railway station only by a 99-foot road. Portion of the east side is faced by private residences.

1619. And no agitation has taken place, but rather the opposite, from the surrounding residents? That is so. We have, in addition, a market in the Sydney Road where the milch cattle are dealt with. So far as cattle are concerned, that market is restricted almost entirely to milch cattle. But it is also a pig market. It is under our own control.

1620. And your inspectors view all animals sold there? Yes; the markets are inspected by Mr. Robertson, who is our Chief Inspector. Every animal is inspected, and anything of a suspicious character is seized for slaughter under supervision, is taken to the abattoirs, and kept for forty-eight hours, in compliance with the Health Act, and during those forty-eight hours the owner has an opportunity of appealing to Justices against our seizure if he likes.

1621. Do you often have appeals? We have never had an appeal, yet, nor have we had what you may term an unsuccessful seizure. The inspector has sometimes seized cattle which, on being slaughtered, have been found to be in a condition which, whilst justifying his action, has enabled him to pass the meat for consumption, the affection being so localised that the carcass of the animal was absolutely fit for food. I have here a return of the stock slaughtered at the abattoirs, and also of the stock condemned. (*Appendix B 2.*) The abattoirs are managed under regulations, which I now put in. (*Appendix B 3.*) These provide for the registration of slaughtermen, for the hours of slaughtering, for the registration of all stock received, for the supply of food to cattle there, for proper cleansing, and for preventing anything from leaving the premises except such as is fit for food. I mean that, even from healthy beasts, nothing but what is good for food is allowed to go out, and the rest is treated at the works. We have a special regulation providing against the manipulation of a carcass so as to remove any signs of disease—what we technically term “stripping.” I put in a copy of these regulations (*Appendix B 4.*) We have also two separate by-laws of the city to meet the difficulty which some of your members noticed in connection with the carting of meat through the streets. I now put in a by-law which provides that no person shall convey through the streets of the city any meat, except in a cart or vehicle so constructed that the rays of the sun, and the rain and dust cannot possibly reach the meat (*Appendix B 5.*) I also put in a further regulation which was found to be necessary, providing that no meat shall be carried in any vehicle except such as has proper protection, and is provided with proper sitting accommodation (*Appendix B 6.*) We found that persons were in the habit of putting a piece of canvas on the meat sometimes, and then sitting on the top of the carcass itself. Under these by-laws we have instituted a good many prosecutions in regard to meat killed at other places but taken through the city. As to the system of supervision, Mr. Robertson's evidence will probably have given you sufficient information; but I have noted shortly that our staff consists of three inspectors, and that, at least, one of those inspectors is on duty at any time when slaughtering is going on—frequently two, and sometimes three.

1622. Have the two inspectors under Mr. Robertson power to condemn cattle as being unfit for food, without appealing to the chief inspector, Mr. Robertson? They do not do so. They hold back cattle, and send for him if there be any difficulty. In regard to anything that is very clear, of course, they have power to seize in the meantime.

1623. They have not power to condemn meat finally until Mr. Robinson inspects it? As a matter of internal management, it is Mr. Robertson who always formally condemns, that is the better way to put it. The slaughter-men are not our employees; they are employed by the master-butchers or master-slaughtermen. But no man is allowed to work in the abattoirs except he be approved of by the superintendent, and put on our register—holding a license, so to speak, from the City Council.

1624. No fee is charged for the license? No fee—it is simply a matter of approval.

1625. And he only holds that during good behaviour? Yes, and compliance with the regulations. Under our Health Act we have power to seize anything that appears to be unwholesome or unfit for food, at any stage, either in our cattle-markets or our Abattoirs, or in shops or the markets, or in fact anywhere else, and we act upon it. If the circumstances are of such a character as to show that the owner had reasonable means of knowing of the existence of the disease we prosecute in every such case. If the circumstances be otherwise, probably the seizure is all that occurs. Under the Health Act anything once seized belongs to the local authority absolutely; the owner ceases to have any further ownership in it; but in order to lessen the loss to the owner, we give him whatever it will produce at the boiling-down works, after deducting any expenses. Of course, he gets the benefit of the hide and the proceeds of the boiling-down, and that lightens his loss a little.

1626. So that if a bullock costs a butcher at the sale-yards £7, and it was afterwards condemned by your officers, you would send it to the boiling-down establishment, and if it realised £1 you would give that £1 to the butcher? Yes; and he gets the hide, which he takes away and sells to the best advantage elsewhere, there being no danger from the hide going out. I may also say that anything siezed is always taken to one pen. We keep one pen in the abattoirs exclusively as a quarantine pen, to which all condemned stock is taken. Anything siezed alive is slaughtered in that pen, and anything detected *post-mortem* is taken to that pen, so that, as far as possible, there shall be no risk of contamination from the bad meat of any good carcasses adjoining. We have by our system of supervision a double check. We inspect the animals in life, and we have the further check of inspection after slaughtering. The present site has the advantage of a water frontage, it being a necessity that there must be some outlet for the drainage, whatever it may be. The present cost of Yan Yean water is a very heavy item. We have to pay the same as any other consumer, namely, 1s. per 1,000 gallons, for all the Yan Yean water which we use for any purpose in the abattoirs. It has become such a heavy item that on one or two occasions the City Surveyor has reported recommending the expediency of putting up a pumping plant and pumping water from the river, although that water, being salt, would, of course, be used only for washing-down purposes. The adoption of the City Surveyor's recommendations would result in a great saving to us in the cost of water for cleansing. With regard to our desiccating-plant, I may say that it has been established for the purpose of treating all the refuse and offal from the abattoirs. I will put in reports from the City Surveyor with regard thereto. These reports are a report prepared in May, 1894, and the annual report for last year, dated February, 1896. The latter shows that during the year 1895 3,035 tons of blood and offal were passed through, producing 758 tons of manure, at a cost of £1,896. [Appendix B 7 and 8.]

1627. What do you get per ton for that? The blood-manure we are selling at the present time at £3 5s. per ton, or £3 per ton for larger lots. It is also sold in bags, and we have agents all through the colonies.

1628. *Mr. Wilks.*] Have you any legislation, regulating the sale of manures? No. There is a Bill before the House at the present time called the Sales of Manures Bill.

1629. *Chairman.*] What does it provide for? It provides for dealing with all manufactured manures. But the introducer of the Bill thinks that the manure produced at the abattoirs will not come under it. If we find that it would come under it we shall take steps to endeavour to prevent its being brought under it, for the Bill contains certain stringent provisions, which, although necessary in the case of manufactured manures, are unnecessary in the case of a corporate body which is simply drying up a bi-product without any adulteration or manipulation whatever, but for the purposes of sanitation. We do not profess to give anything beyond what the desiccators turn out. I suppose that I need hardly express my opinion as to the necessity for stringent supervision in regard to meat supply, and I am of opinion that that can be obtained only by, in some degree, a concentration of all slaughtering-places.

1630. You think that the present private slaughtering-places just outside the boundaries of the city, and which at present supply the city of Melbourne and its suburbs with a large proportion of the meat consumed, ought to be brought under the same strict supervision as is practised at the Corporation Abattoirs? Certainly, nothing less. I do not say that they should be brought to our abattoirs—as to that we do not care—but they should be so concentrated as to enable proper supervision to be carried out. At the present moment with private slaughter-houses in such large numbers, such supervision is absolutely impossible.

1631. You think that while those private slaughter-houses are allowed to exist in isolated spots outside the city boundaries, the health of the people of Melbourne and its suburbs is always liable to danger through want of proper inspection? Yes, a serious danger.

1632. That danger would be got rid of if those slaughtering-places were under such supervision as exists at the Corporation Abattoirs? Similar supervision in any abattoirs would be a very safe protection.

1633. And you are of opinion that while those private slaughter-houses are allowed to exist an invitation is held out to buyers of cattle to take them to the private slaughtering-houses to be killed rather than to your Corporation Abattoirs, for fear of the strict supervision, resulting in the condemnation of cattle that would otherwise be allowed to pass and go into consumption from the private abattoirs? The temptation afforded by a lack of supervision is too strong to be resisted.

1634. *Mr. Wilks.*] Our experience at Williamstown this morning would strengthen that opinion, would it not? If it needed strengthening. I may say that in visiting a certain private slaughter-house outside the city I saw eight bullocks hanging ready to be sent to the market; two out of the eight had been stripped, and I saw the organs which, no doubt, came from those beasts, and which were badly diseased; but they had been removed, and the beasts had been stripped. There was no doubt as to the beasts having been diseased, but in the absence of immediate proof, those beasts went into consumption.

1635. *Chairman.*] That would have been an impossibility at the Corporation Abattoirs? Yes; because even the stripping, as I have said, would not be allowed.

1636. I suppose you have found difficulty in conducting the Corporation Abattoirs, owing to the fact that the strict supervision there almost induces men who have been engaged in slaughtering at your abattoirs to go elsewhere? Yes. A number of the master butchers—I suppose I may say eight or ten—have, during the past few years, had to leave us, or have left us, because they could not stand the losses which were entailed by condemnation; that is their own statement.

1637. So that these men have admitted that for their own sake—that is, in order to avoid the great pecuniary loss entailed upon them by the condemnation of cattle at your abattoirs, owing to the strict supervision

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J. Clayton. supervision;—they have tried to get rid of the possibility of such loss by having their cattle killed at private slaughter-houses? That is so.

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1638. You think that, generally speaking, the carcass butchers of Melbourne and suburbs would rather have the whole of the slaughtering-places in and around Melbourne placed under one uniform system of provision? No doubt. They do not object to it at all, provided they are all placed on the same footing.

1639. So that they might be able, by combination, to obtain a rebate from the people from whom they buy cattle which are afterwards condemned? Personally I do not approve of that being legislated for, because directly it is legislated for, the Legislature has to manufacture the necessary machinery to carry out the law. If they know that the loss falls on the immediate owner the butchers will take care to buy under such conditions as will protect them against their vendors, in the event of seizure and condemnation, and I think that that is infinitely the best way;—it leads to fairness of trade between vendor and purchaser. I am unhesitatingly of opinion that the abattoirs should be under municipal control, in the same way that I think both lighting and water supply should be entirely under municipal control. The articles in question are consumed by every citizen, and, therefore, any profits derived from those industries should go to the citizens themselves, in addition to their having a voice in the management of those undertakings, and seeing that they are carried on, in their opinion, to the best advantage.

1640. *Mr. Wilks.*] How does the Board of Health co-operate with the City Council? The Board of Health is what you may call a superior or governing body, appointed by the Government for the whole Colony. It is composed of seven municipal representatives and two Government representatives, one of whom is its chairman.

1641. What about the scientific portion? The Chairman, Dr. Gresswell, is the chief medical officer.

1642. Does he ever assist the inspector at the abattoirs, or call his services into requisition? We work together to the extent that if any case of special interest arose, I would bring it under the notice of the Board's officers, and the Board's officers work in harmony with the officers of the Council. We also of course employ outside veterinary assistance if we want corroboration of our own officers' statements in any prosecutions.

1643. Have the Board of Health any officers who pay visits of inspection to the shops of retail butchers? The Board has a number of inspectors, and during the past few months the Government has appointed a special veterinary inspector, whose duty it is to supervise the whole of the dairy herds, and also the meat supply of the Colony.

1644. Do you favour a closer relationship than now exists between the Board of Health and the local councils? I do not like the idea of having an interfering body, but a body working in harmony with the local councils for the general good, and that is the relationship which the City Council endeavour to maintain with the Board.

1645. And that would be of great advantage to the large body of consumers? Of great advantage; because outside places could then have a superior officer to whom they could refer in cases of difficulty. I am now referring to some municipalities outside, who have not an opportunity of having a permanent staff of their own.

1646. In regard to the present private slaughter-houses, how would you look upon legislation prescribing the area that you had to operate upon? I think that the legislation should be in the direction of providing for probably three abattoirs for the whole of the metropolitan area—one each at three different points of the compass. Within a radius of 10 miles from the post-office there should be two or three abattoirs, in different centres, so as not to have too much inconvenience from carting long distances.

1647. So you would not concentrate all your efforts on one site? I think that would be a mistake. I do not think that the work could then be carried out with satisfaction.

1648. Your present site would be large enough for one? We have room to extend over a great deal more than we are now doing. I am of opinion that there is sufficient power under our Health Act now to require some of those defective places outside to be brought into a proper condition, if the law were enforced.

1649. The council having control of the abattoirs. Judging from your experience, you would say that there is no patronage exercised by members of the council in regard to the appointment of employees? None whatever.

1650. *Chairman.*] How do you manage about water-borne cattle—cattle coming from abroad by steamer, how do you manage to get them to the present sale-yards? I question if there are any worth talking of. I do not think that we have any to speak of. They would certainly be very few.

1651. You cannot call to mind any consignments of cattle coming by sea to your port? No.

1652. They mostly come by rail? From different parts of this colony or from the other colonies.

1653. So really you have not taken into serious consideration the cattle coming by steamer, simply because, if any, they are so few? If any came they would have to be driven, in accordance with our regulations controlling the travelling of stock through our streets, and limiting it to certain hours.

1654. *Mr. Bawster.*] In your statement, did you give consideration to the questions which I submitted to you in writing last night? I think I have answered them all.

1655. *Mr. Law.*] Can you tell me whether the desiccating portion of the works alone is paying its way? At the present time the desiccating works are just about paying their way—if anything, they are giving a slight profit.

1656. You say that in 1889 £12,000 was expended in constructing the desiccating plant? Yes.

1657. Do you think that the desiccating plant is fully up to date? I know of nothing better. If we had a bone-mill in connection with it, for the treatment of the bones from the abattoirs, we should have an ideal manure, by putting the pure bone-dust with the blood-manure. I may say, that in connection with the cattle sale-yards and the abattoirs, but mainly in the cattle yards, there are about 24 acres of pitching.

1658. *Mr. Wilks.*] Do you approve of the cattle-slaughtering pens being on the same principle as the places for slaughtering sheep and pigs? Yes, on an improved plan; but not being an engineer, I do not know what the latest improved plan is. In their present form they are so constructed as to save labour as much as possible. The sheep and the pigs walk up to the higher level, and we get practically a gravitation scheme for the treatment of the carcasses and all the offal, and by that means we save labour. No doubt our new buildings for cattle will be somewhat on the same lines. I submit a description of the big slaughter-houses recently erected, which may be of interest to the Committee. [*Appendix B 9.*]

## SELECT COMMITTEE ON THE ABATTOIRS.

FRIDAY, 9 OCTOBER, 1896.

[The Committee met at the Australian Chilling and Freezing Works, Aberdeen.]

Present:—

MR. BAVISTER, | MR. LAW,  
MR. WILKS.

J. S. HAWTHORNE, ESQ., IN THE CHAIR.

William Anthony Benn, sworn and examined:—

1659. *Chairman.*] What are your works known as? The Australian Chilling and Freezing Company's W. A. Benn. Works. 9 Oct., 1896.
1660. You are the general manager? No; the general manager is in London.
1661. You are the manager for the company in New South Wales? Yes.
- 1661½. The Company is an English one? Yes.
1662. Have you a local directorate? No; the Board of Directors are entirely in England. In this Colony Mr. R. M. Pitt (of Pitt, Son, and Badgery), Sydney, and Mr. Jesse Gregson, the manager of the A.A. Company, Newcastle, constitute what is called the Local Board of Advice.
1663. The whole management of the works is entirely in your hands? Yes.
1664. Did you come out from the old country to manage these works? No; I was thirty years in New Zealand.
1665. You had previously had a large amount of Colonial experience? Yes.
1666. Where were you employed previous to taking charge of these works? I was never previously employed. I was always working on my own account.
1667. Had you a large experience in the meat trade previous to coming here? Not much in the meat trade, but with large stock generally. I was a sheep farmer, and I had also a large experience in live stock and station business in New Zealand.
1668. Were you the first manager appointed here? Yes.
1669. And you have been here ever since the establishment of the works? Yes.
1670. What number of sheep do you generally kill here? At present we are killing about 1,000 "freezers" a day, and about 500 or 600 sheep for tinning and boiling besides. That is about the average number that we kill each day now.
1671. What number of cattle do you generally kill? We generally kill about 75 head of cattle a day.
1672. What has been the largest number that you have killed in any one day? A little over 3,000 sheep.
1673. And the largest number of cattle? About 130 head.
1674. Do you buy your sheep principally in this Colony? They come chiefly from the Liverpool Plains, in the Narrabri district.
1675. How are they conveyed to you? Chiefly by rail. The "freezers" come in by rail, and the sheep for boiling and tinning generally by road.
1676. And the cattle? They generally come from the Hunter on foot. We have never had any cattle sent to these works by rail.
1677. In regard to sheep and cattle, which do you think turn out the better meat, those that come by rail or those that travel along the road? There is no doubt that sheep travelled along the road, so long as you can rest them afterwards, turn out much better meat than trucked sheep. Trucked sheep get very badly treated whilst in the trucks, and they want a long time to recover.
1678. When you get sheep brought in by rail, how much time do you generally allow to elapse before you kill them? It depends on the conditions under which they are trucked. If the weather is wet, and the sheep are trucked wet, and they have a good deal of wool on them, they want a week's rest. If, on the other hand, they are shorn sheep, and they have not come a very long distance, and they have not very heavy fleeces on them, and if they have been trucked dry, you can reasonably kill them within three or four days after their arrival out of the trucks.
1679. And the cattle? Well, cattle, even if they walk only 3 miles in weather like this, want forty-eight hours' rest before they are killed, or the meat is more or less fiery.
1680. You never on any occasion start killing cattle just after they have been driven into the yards? Never. We always allow them at least forty-eight hours' rest before killing.
1681. And you find the meat is all the better the longer they are kept in the paddocks? Yes; within a reasonable time.
1682. You do not keep the cattle alongside the slaughter-house previous to killing? We yard twice a day, so cattle are never more than three hours in the yard before they are killed.
1683. You do not, then, require to resort to artificial feeding? No.
1684. You have sufficient grass paddocks to accommodate all the cattle you kill? Yes.
1685. What do you do with the offal from the sheep and cattle that you kill? Put it all through the desiccator and turn it into manure.
1686. Do you find that there is much demand for the manure? We sell it as fast as we can make it.
1687. Is it for export trade or is it used by the farmers round about? Both. There is a very strong demand for it on the part of orchardists. I am sorry that I sold a good deal for export a little while ago, for people about Gosford have been sending for a lot that I have been unable to supply.
1688. So that now you really find the local demand quite equal to, if not greater, than the supply? No; the local demand is not nearly up to supply, but still it is growing fast.
1689. You find an increasing demand on the part of orchardists and farmers for the manure? Yes; the Chinamen began the use of it, and now the European is following in the steps of "John."
1690. What is your average price for the manure? According to quantities—about 45s. per ton on the works, new bags given in.
1691. Which manure is that? The manure from the offal—what is generally called "fertiliser."
1692. Does manure produced from blood realise a higher price than that? Yes.
1693. What price do you generally get for it? About £4 a ton.
1694. What is the quantity of manure that you are able to manufacture per month? Our output for the last twelve days is 21 tons. We often get a great deal more than that which was only from "freezers." There were no "boilers." When we kill "boilers," we get a great deal more. You may say that we make 1,000 tons a year. 1695.

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1695. Do you obtain a profit from your desiccating works? Certainly. It used to cost us about £500 or £600 a year to cart the stuff away, and this became such an intolerable nuisance that I had to bury it.
1696. When you first started, you were accustomed to cart the offal away? Yes.
1697. It is only recently that you have resorted to desiccating the whole of the rubbish? I was always wanting to do it, but my people did not care for it; at last, however, I persuaded them to go in for it. The desiccating plant was rather expensive. It cost about £1,200 or £1,300.
1698. But you have found that in resorting, as you have done, to desiccating all the offal and other excrement from the beasts you kill, it is a profitable concern, in addition to getting rid of all possible nuisance? Certainly.
1699. What did you used to do with the offal previously? The refuse from the vats was all boiled in the pots, and then carried away to the rocky side of the hill, where it was left lying in the sun till it was dried up, it being meanwhile raked about; it was then taken to the bone-mill and ground up, and subsequently sold as bone manure.
1700. Have you ever heard any complaints from residents in the district as to smells? Oh dear, yes.
1701. Any number of complaints? Yes; at that time. I had to put my head under the sheet at night when the wind came from that direction.
1702. But since you started desiccating? There is absolutely no smell. At least, there is a slight smell to a stranger, but I should never notice there was any smell at all.
1703. And you have had no complaint from the townspeople since the desiccating was started? None at all.
1704. How many men do you generally employ here? Between 200 and 250 men.
1705. Do the men work on piece-work? A large number of them.
1706. How do you manage in regard to the cleansing of the work;—is that done by the men in your employ on day-work? Yes; by the hour. Each gang of men have to clean up their own place.
1707. Were the works designed by a local architect? They were designed by Coxon and Greenstreet, engineers, of Sydney—I mean the original works were.
1708. You have added considerably to them since you became the manager? Yes; the additions have been done by ourselves, with Mr. T. H. Houghton, also an engineer in Sydney, as our consulting engineer.
1709. Were the brick buildings which we have just gone through erected at the commencement of your operations? Yes.
1710. In which year? In 1891.
1711. So that you have been established here about five years? We shall have had a five years' run on the 19th December next.
1712. Is your trade entirely export, or do you supply the colonial market with meat? I have been sending lately a good deal to the dead-meat market in Sydney—a couple of hundred head of cattle, and a few truck loads of sheep a week generally.
1713. Do you find in the hot weather, when meat is sent that distance, it in anyway becomes tainted? Not under proper conditions for chilling, and having the cars sufficiently cooled with ice or snow, but it would not do unless you took very careful precautions.
1714. Do you have much trouble in the slaughter-house to keep the meat from becoming tainted or blown? No.
1715. You have had no complaints that when your meat has arrived in Sydney it has been in a blown or tainted condition? I cannot say that we have had no complaints. In one of the cars there were a few quarters, once, or perhaps twice, which were reported as being slightly tainted, but that occurred when we were not chilling, at the beginning of the hot weather. We saw that not chilling would not do any longer, and we therefore went on chilling before sending any more. In the winter you can send it without chilling.
1716. In the summer, what period elapses between the time of killing sheep or cattle and the time the meat is placed in the refrigerating chamber? That entirely depends on what sort of day it is.
1717. Supposing it were a day like the present? An average of about eight hours—that is, for mutton.
1718. What was the temperature to-day? About eighty in the slaughter-house. In regard to a beast killed in this weather I would not approve of its being kept out of the refrigerator more than three hours.
1719. Do you suffer much from the blow-fly nuisance in the slaughter-house? No, very little. Blow-flies begin to come in October, or the early part of November, but they disappear directly the small flies come.
1720. *Mr. Wilks.*] Have you ever visited the Abattoirs at Glebe Island? Yes.
1721. Did you take particular notice of the desiccating works there? I did.
1722. How did you find them to be—up to date or out of date? Right out of date.
1723. Would you mind giving me a description of the expensive treatment there? I can hardly do that. I just went there and saw the character of the revolving hurdy-gurdies and other things there. I saw that the men were very fully employed with what they had to do, and I asked them if they put through the whole of the offal, and they professed to do so. I then asked to be kind enough to let me see their delivery book in reference to offal, and I found from the delivery book that the tons or bags of stuff delivered was nothing like approximate to the quantity of offal that I knew must come from the number of animals they said were being killed at Glebe Island. I then perceived at once that the desiccators were not doing the work they professed to be doing, because I could see what the outcome of the desiccators was in the bags of stuff taken away, and I say that those desiccators would be utterly unable to cope with what we do here, which is much less than what is done at Glebe Island.
1724. New desiccators are essential for the Abattoirs at Glebe Island? Absolutely.
1725. Did you notice the unnecessarily large quantity of water treated there with the offal? Yes. I should say that better desiccators than ours can be obtained.
1726. What improved desiccators would you recommend? The best makers of desiccators are Anderson & Company, of Cleveland, Ohio.
1727. What is the distinctive name of the machine itself? They simply call it a three-cylinder drier. The stuff goes in at one end, and is passed through, and then comes back again.
1728. The new machine that you have suggested would save a considerable amount of expense in connection with the Abattoirs at Glebe Island? Certainly it would, and it would also be a source of great profit.

1729. Are you acquainted with the difficulty experienced at the Glebe Island Abattoirs in connection with the sale of the manure? Well, they ought to experience none, if they had a good article, but they have not a good article—they have not an article that would stand analysis. They put in the contents of the paunches and other stuff, and reduce the analytical value of the manure to such an extent that you might just as well distribute so much dust about a place.

1730. So their article is rendered unprofitable through want of proper treatment? Certainly, because it will not stand analysis. I have not seen an analysis of it, but I know it must be a very poor one.

1731. What other weak spot did you notice there? Well, it was full of weak spots. The whole place is so cramped that it is impossible for any inspector to see everything that is being killed there. A diseased beast could be killed in the absence of the inspector, and all the diseased portions put out of sight before he had a chance of seeing them. Plenty of space is required. Our percentage of condemned cattle here is three or four times greater than the percentage at Glebe Island.

1732. What system of inspection have you here? Our inspector attends every morning, and stops here and sees every animal killed.

1733. What is the percentage of animals condemned here? Of cattle, between 3 and 4 per cent.

1734. And of sheep? Very few sheep are condemned for disease, but the percentage condemned is very large when we are on "freezers," because we reject so many for want of condition. Sometimes you may see in a newspaper report that during a month we have condemned 1,800 or 2,000 sheep, but we always condemn sheep that are out of condition.

1735. What is your private opinion in regard to the various diseases of animals;—do you think that they affect the healthiness of the meat supply, or is the matter merely a sentimental one? That entirely depends on the nature of the disease, and also on what is done with the meat before it is submitted for human consumption. You may take meat from a diseased animal and cook it in the form of a sirloin of beef, and if it be a little bit out of condition it may be poisonous; but you might put it in a tin and cook it for several hours at a certain temperature, and it might then be perfectly harmless. Therefore you can hardly say right off what is safe and what is not safe; but, as a broad rule, no diseased meat ought to go into human consumption.

1736. What is your opinion in regard to Glebe Island—do you think that is a good site for central abattoirs? No; I do not. There is the trouble of getting stock to the Island.

1737. You mean the cattle-droving? Yes; I think it is prohibitory—I do not think it is worth secondary consideration—if you have to drive cattle through small streets. I have my cattle driven round through out-of-the-way roads and through private gates, so that they shall not go through the streets of even a private township like Aberdeen. Not one beast out of 100 killed at Glebe Island is really fit to be killed when it is killed, because it is in a heated condition.

1738. Do you think that they rest at Glebe Island a sufficient time for the inflamed state to be reduced? I am sure they do not.

1739. The meat supply of the city suffers considerably from that? Undoubtedly.

1740. Are you acquainted with the modern pens for slaughtering pigs and sheep, the same as there are at Flemington, near Melbourne? I have seen some of them.

1741. What is your opinion in regard to them? They are very good indeed.

1742. In connection with the establishment of new abattoirs, would you recommend the erection of pens similar to those? I think so.

1743. Not only for sheep and pigs, but also for cattle? For everything.

1744. In connection with the establishment of new abattoirs, would you also recommend that there should be near at hand places for boiling-down purposes, and the dealing with all the by-products? Certainly.

1745. That would necessitate the removal of the present Abattoirs from Glebe Island, and the erection of abattoirs at a greater distance from the city? I think they ought to be as near the saleyards as possible.

1746. And all the so-called noxious trades should surround the Abattoirs? Yes. As a matter of fact, a proper up-to-date modern abattoir should be one of the most innocuous things extant—there should be less nuisance from it than from an ordinary butcher's shop in the city, because the butcher is obliged to keep meat for a long time hanging up in his shop, whereas the abattoir man is not, but has all the necessary appliances to get the meat away as soon as possible, whilst the butcher has sometimes to keep in his shop meat that smells.

1747. Therefore, not only is the design of the Glebe Island Abattoirs inadequate, but the system of inspection there is weak? I do not say that the system of inspection is weak, but the inspector cannot see everything that is done there. No inspector could possibly check all that is being killed there, on account of the structure of the building.

1748. Do you know how many inspectors there are at Glebe Island? No, I do not.

1749. Do you consider seven inspectors sufficient to do the work of inspection at Glebe Island? I do not know sufficient of the working of the place to express an opinion about that.

1750. Do you consider that the present number of inspectors—seven—is sufficient, in view of the present construction of the abattoirs? I should think seven inspectors ought to be sufficient.

1751. And with the improvement you speak of in regard to architecture fewer inspectors could do the work? Certainly.

1752. *Mr. Law.*] Can you tell me what is the total cost of the works here altogether, as they stand now? They represent about £59,000, including the land.

1753. Can you tell me whether there has been a fair return on the capital invested, in the shape of interest? There has not.

1754. Have you any objection to tell me what the return is? There has been one dividend declared of 5 per cent. in three years.

1755. Can you tell me what has been the total value of the output from all sources in any given year? No; I can hardly do that. Roughly speaking, it would average about £100,000 a year.

1756. In reference to the Glebe Island Abattoirs, your chief objection to them is on account of the want of space, architectural defects, and the inadequate machinery there at the present time? Yes; and the situation.

1757. But your objection to the situation is, I believe, only on account of one fact, and that is, the absence of proper means to enable cattle to get to Glebe Island? Yes; otherwise I maintain that a properly-conducted abattoir could be carried on in George-street without your knowing it was there.

W. A. Benn. 1758. Of course you know that only a small portion of Glebe Island—about one-fifth of it—is utilised for abattoirs at the present time? Yes.

9 Oct., 1896. 1759. *Mr. Bavister.*] You said, in reply to Mr. Law, that the total cost of the works was £59,000—what area of land is included in that expenditure? Freehold land, about 1,050 acres.

1760. Is the railway siding included in that expenditure, or does it belong to the Railway Commissioners? The railway siding from this side of the gates is included in the expenditure, and cost us £800.

1761. It has been stated by previous witnesses, without, of course, any special reference to your place, that the meat killed in the country does not arrive in Sydney at certain seasons of the year in a fit state for consumption, but I suppose there is nothing to prevent the meat arriving there in a fit state if proper appliances are used? Certainly not. There are the works at Narrabri, Gunnedah, and Werris Creek sending down carcasses of meat to Sydney every day past here in perfect order. If dead meat arrives in Sydney in bad order it is owing to culpable negligence on the part of somebody.

1762. Might not an improper condition of the meat be brought about in consequence of improper treatment of it before cooking and after its leaving the butcher's establishment;—is it necessary to take special precautions to avoid that fault? Sometimes the meat that is sent down to the dead-meat market has not been frozen. Unless you freeze meat that is sent down from the country it is not fit for the dead-meat market.

1763. Then the matter is principally one of prejudice? I should imagine so. I suppose I have sent down over 2,000 head of cattle to the Sydney meat market within the last three months.

1764. You stated, in reply to Mr. Wilks, that you have condemned as many as 1,800 or 2,000 sheep in a week when you were killing "freezers";—was that meat absolutely lost? No.

1765. Was it not possible to utilise that meat for canning purposes? Yes.

1766. And such course is adopted? Yes, with a great many of them. Of course, if the sheep has a lump or any cyst it goes into the desiccator at once.

1767. *Chairman.*] When you spoke of sheep being condemned you did not mean that those sheep were diseased in any way? The number I mentioned included diseased sheep. Sometimes there are sheep suffering from cysts and swellings, very rarely you will get a cancerous sheep; and you may get a sheep that has tuberculosis, but the limbs of which are absolutely harmless.

1768. The skilled experts you have met with have given you sufficient information to justify you in using what many people would call diseased sheep? No, certainly not what many people would call diseased sheep.

1769. Then, what are we to understand that the 1,800 sheep were condemned for? For want of condition—not being fit for freezing.

1770. That they were not presentable sheep? Yes.

1771. Your company, as far as possible, kill and freeze only sheep that are of a presentable character, and of the highest class procurable? Yes.

1772. I suppose the object of that is, first of all, to obtain a readier sale, and, secondly, at the same time to keep up the reputation of the works? It just depends where we are shipping to. If I got a Continental order, I have to send to that order sheep which I dare not send to the London market. On the Continent the lean, poor-looking sheep sell better than fat ones.

1773. But that does not apply to the English market? No. To the Malta market we have to send a particular kind of sheep.

1774. Where are your principal markets for export? London.

1775. Do you send any to Africa? We have sent a few, and hope to send more.

1776. You have also sent to Malta? Yes, and to Port Said.

1777. Do you send much to the Continent? No. We have had only one or two Continental orders, and they have been second-hand—we have no direct relations with the Continent.

1778. So you really kill for freezing purposes with the idea of exporting mutton and beef, and you also kill for canning purposes? Yes.

1779. And also for curing? Yes—tierce beef.

1780. How long is it since you visited Glebe Island? Nearly three years.

1781. The opinion you formed generally of Glebe Island was not of a favourable character? Certainly not.

1782. Have you visited the Flemington Abattoirs, outside Melbourne? A very long time ago. I have been there, but not for five or six years.

1783. What did you think of the Flemington Abattoirs? Well, they have been altered so much since then that I could hardly say what they are like now.

1784. You remember distinctly your visit to Glebe Island? Yes, distinctly.

1785. Do you think that the Glebe Island Abattoirs are suitable for the supply of a large meat market, such as that of Sydney and its suburbs? No, not as they are now; but abattoirs could be put up on Glebe Island which would do everything necessary.

1786. You think that the position of Glebe Island is in every way suitable? No, not the situation; but I think that you could put up an abattoir in George-street or Pitt-street and not cause a nuisance if the abattoir were properly conducted. The difficulty is in regard to getting stock to it.

1787. Your idea is that an abattoir, if properly conducted, could be placed in the most thickly populated place without being objectionable? Certainly.

1788. You have heard from people who have visited the Chicago Abattoirs that they are right in the most densely-populated portion of the city, and are found to be entirely unobjectionable? Yes. They have large yards at their abattoirs in Chicago, and they rest the cattle for a long time after they come out of the cars before they kill them.

1789. Have you visited the sale-yards at Homebush, near Sydney? Yes.

1790. You know that cattle have to be driven from the sale-yards at Homebush to Glebe Island before being slaughtered? Yes.

1791. What would your opinion be as to the character of the meat after the cattle have been driven for such a distance over hard macadamised roads? I would not care to have a pound of it for export.

1792. You think that the meat is injured to such an extent that no private company would care about having anything to do with it? I cannot say what any private company might care about doing, but if I were told to handle that class of meat I should chuck up my billet.

1793. You think that the method of driving cattle from the Homebush cattle sale-yards to Glebe Island is

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is about the best possible method to cause serious injury to the quality of the meat? It makes it heated and fiery. You cannot get the blood-veins back, and the meat must be suffused with blood, and it stands to reason that the more meat is charged with blood the worse it is, and the quicker it will go bad.

1794. Would you think it would be a much more advisable thing for the metropolitan abattoirs, instead of being at Glebe Island, to be as close as possible to the present saleyards at Homebush? Certainly I would—as near to the sale-yards as possible.

1795. Do you think it would be possible to have abattoirs constructed close to the present sale-yards at Homebush without their proving objectionable to the surrounding neighbourhood if they were conducted with all the modern appliances in the way of cleanliness? Nobody should know they were there.

1796. Would you also think it possible for the abattoirs to be so constructed close to the sale-yards at Homebush, and also in close proximity to the Parramatta River, without their proving in any way injurious to the public health, or destructive of the present appearance and beauty of the Parramatta River itself? Certainly; they need not let a drop of anything go into the Parramatta River if they work properly. There are two things which we do not do here which should be done in order to work a meat factory properly in a populous neighbourhood, and with an area of land upon which to work such as we have here. The whole of the soup from the digestors should be turned into tankage and evaporated, and the residue would then form a marketable fertilizer, which would pay for the work; you could get £4 a ton for it readily.

1797. The whole of the useless liquid that comes from your slaughter-house is pumped over the hill at the back of your slaughter-house? Yes.

1798. And nothing in the way of objectionable smell comes from the liquid after it has been deposited on the ploughed land? The ploughed land does smell a little, but it is a long way off,—right over the hill in the bush—and directly the ground begins to smell I put the plough in again, and turn it over, and get rid of the smell. There is one other thing that may cause a smell, and that is the blowing off of the steam from the digestors when you are cooking; but that could be got rid of by applying your system in a tunnel connected with a main chimney stack.

1799. What is the reason why you do not convey the soup down to the river? We should poison people; we dare not do it.

1800. The Government would object to anything like that? Of course they would. You would taste it down the river for miles.

1801. And I suppose that the water of the river is used for drinking purposes? Certainly.

1802. Going back to the machinery at Glebe Island, you are of opinion that the desiccating machinery is quite out of date? Absolutely out of date.

1803. If machinery something like what you have here were at Glebe Island, do you think that the whole of the refuse taken from the beasts at the island would prove far more profitable to the Government than it does at the present time? Certainly.

1804. Have you a Government inspector of the slaughter-house here? Not a Government inspector, but we have an inspector here, in whom the Board of Health have every confidence, and when I have any animals killed, I get certificates from him, and hand them to the Board of Health, and the Board of Health give me their certificate to accompany the shipment, and I send that certificate with the shipment.

1805. In whose employ is the resident inspector? The Municipal Council of Aberdeen.

1806. Has this inspector, to your knowledge, had any practical experience in the cattle business previous to being appointed inspector here? He was for nearly forty years a practical butcher.

1807. So he is thoroughly able to judge whether an animal is or is not diseased? Yes.

1808. How frequently does he visit you? He comes on duty when the whistle sounds in the morning, and he goes away after the last beast has been killed in the evening.

1809. So, practically speaking, he is here all day? Yes; all day.

1810. Do the Municipal Council of Aberdeen pay his salary? Yes; and we pay them fees for slaughtering; our slaughter-house fees help to pay his salary.

1811. May I ask you what are the fees you are charged for killing cattle and sheep? Three-pence a head for cattle, but nothing for sheep.

1812. You do not slaughter any pigs? No.

1813. Practically speaking, you have an inspector in the establishment all day long while the killing is going on? Always.

1814. And it would not be possible, for you, even if you felt desirous of doing so, to pass diseased meat into consumption? I should think not. I insisted on an inspector being appointed, because I want to export meat, and I cannot get meat into foreign countries unless I have a Board of Health certificate. The only way in which I could get meat into foreign countries was by insisting on having an inspector here whose certificate would be sufficient for the Board of Health to give me a certificate to accompany my shipment. It was at my request that an inspector was located here.

1815. So, as a matter of fact, so far from your being against inspection, it is strictly in accordance with your wishes that there should be the most rigid inspection of all meat killed here? Yes. Before the municipality was formed I offered to pay the Board of Health £250 a year if they would send a competent inspector here.

1816. How long has the municipality been in existence? A little over a year.

1817. Previous to that, what inspection took place here? None. We did not kill any cattle then—only sheep.

1818. But since you started killing cattle, you have had inspection by this inspector? Yes; ever since we killed the first head of cattle.

1819. Have you visited any other abattoirs besides those at Glebe Island? No.

1820. Have you visited any other large meat cooling establishments in the Colony? No.

1821. What was the idea in selecting this particular spot at Aberdeen for starting these works? This site was selected before I knew anything about it. But one of the reasons that induced its selection was that it was within a reasonable distance of a shipping port. It was then an unascertained fact how far you could carry meat in cars, and the people connected with this company thought that they reached about the limit of safe carriage in coming thus far; otherwise, perhaps, they would have gone nearer the pastures—the Liverpool Plains—instead of coming here.

1822. Those were the only ideas that actuated them? Yes, I think so. You must have a good water supply also, and be close to the railway.

- W. A. Benn. 1823. At Aberdeen you have a good water supply from the Hunter River, and are also alongside the main line of railway, and are within reasonable distance of a shipping port? Yes.
- 9 Oct., 1896. 1824. I suppose that we are safe in saying that within an hour after the slaughtering is done your slaughter-houses are perfectly clean and free from objectionable smells? Yes.
1825. *Mr. Bavister.*] We have noticed that you are making extensions;—what will be the full capability of your works after you have completed your present extensions? About 3,000 sheep a day, or 1,500 sheep and 100 head of cattle.
1826. *Chairman.*] What becomes of the animals that are condemned by your local inspector? They are boiled down.
1827. Does he do anything that would prevent the possibility of the flesh from being used for any other purpose? Yes; he jags it about with a sharp knife.
1828. He does not put carbolic or kerosene on it? No.
1829. It is boiled down under his supervision? Yes; it goes straight into the pots.
1830. It would not be possible for you, after the inspector left, to make use of it? No; it goes away at once. All the healthy bodies are put on the rails. When a beast is condemned it is condemned on the ground, and is never lifted on to the rails, and it has to be got out of the way at once to make room for the next animal.
1831. What is the average amount which you pay to the municipal council in fees for cattle killing? It varies very much.
1832. Taking it on an average, do you think that you pay enough in fees to compensate for the salary which the local council pay the inspector? Yes, just about enough.
1833. Does he do anything about the township of Aberdeen besides watching the killing of stock here? Nothing whatever.
1834. So he is practically an officer continually in this establishment? Yes, continually in this establishment.

SATURDAY, 10 OCTOBER, 1896.

[The Committee met in the train between Glen Innes and Tenterfield.]

Present:—

MR. BAVISTER,	}	MR. O'SULLIVAN,
MR. LAW,	}	MR. WILKS.

J. S. HAWTHORNE, ESQ., IN THE CHAIR.

Arthur Richmond Morton, sworn and examined:—

- A. R. Morton. 1835. *Chairman.*] You are the manager of a large meat works at Tenterfield? Yes.
- 10 Oct., 1896. 1836. What is its name? The Tenterfield Meat Works.
1837. How long have you been managing it? About eight months.
1838. How long have the meat works been in existence? I think about five years.
1839. Were you engaged in the establishment previous to becoming manager? Not at Tenterfield.
1840. Had you any previous experience? About two years' experience in Geddes, Birt, & Co.'s meat-freezing works, Darling Harbour.
1841. On an average, how many cattle do you kill in a week in the establishment at Tenterfield? We have put through as many as 300 a week.
1842. Do you confine yourself entirely to the killing of cattle? No; we also kill sheep.
1843. On an average, how many sheep do you kill a week? We can kill about 3,000 a week.
1844. What is your average killing? 2,500.
1845. Have you seen the meat works at Aberdeen? No.
1846. Your buildings are, comparatively speaking, new? Yes.
1847. Built on modern lines? Yes, pretty well.
1848. One or two storey establishment? One.
1849. You kill on the ground floor? Yes.
1850. From where do you principally get your cattle and sheep? From the Darling Downs, Tenterfield Station, the Richmond River and the Clarence River.
1851. Is your stock principally conveyed to you by rail? All by road.
1852. What is your opinion with regard to droving and trucking;—do you think the meat is superior when the cattle are travelled by road, or is it superior when the cattle are conveyed by rail? Superior when driven along the road.
1853. Do you not think that driving cattle along a road would have a tendency to make the cattle tired and worn out? Not if you drove them properly. You should never drive fat bullocks and fat cows together, because if you do the bullocks jump the cows and the cows jump the bullocks, and they bruise each other. You should drive fat cows together and fat bullocks together.
1854. Is your establishment under rigid inspection by any Government official? By Mr. St. Clair, the Government Inspector at Glen Innes and Tenterfield, and also by the senior-sergeant of Police, who attends the works every morning and inspects the cattle alive.
1855. Has the senior-sergeant had any previous experience in the matter of cattle inspection? I do not think so.
1856. Do you think that he is a man fit to detect disease if disease existed? No, he is not.
1857. Is the other Government official a man of large experience? Yes.
1858. He would be able to detect disease? Yes; Mr. St. Clair would.
1859. How often does he visit your establishment? He perhaps comes only once a week.
1860. So it would be quite possible for you, as manager of the company, if you desired to do so, to kill diseased cattle and to put it on the market without the fact being known to any of the officials here? Yes.
1861. What is the percentage of cattle condemned at your establishment? We have only had twelve condemned out of 4,800.
1862. That seems rather a small percentage? Yes.

1863. Do you think that, if the inspection were more rigid, a larger percentage would be condemned? A. R. Morton.  
No; some of those cattle were condemned by ourselves without the inspector being there.
1864. What do you do with the condemned cattle? Boil them down.
1865. Is your trade confined to export? No; we kill and chill for sale in Sydney and also for export.
1866. Which do you do most for—export or sale in Sydney? Sale in Sydney; in fact, we have exported no cattle this year, but have sold all ours in Sydney.
1867. You send your meat principally to the Government Meat Market at Darling Harbour, Sydney? Yes.
1868. You send it down in refrigerating cars? Yes.
1869. Do you find, as a rule, that meat suffers much through becoming tainted before its arrival in Sydney? Not at all. We have not had a loss of any meat this year.
1870. Have you, at any time, visited Glebe Island? Yes.
1871. Have you made a close inspection of Glebe Island as to its adaptability for slaughtering purposes? Yes, I have been through the establishment.
1872. What is your opinion, generally speaking, of Glebe Island as a slaughtering place? The slaughter-houses themselves are good.
1873. How do the slaughter-houses at Glebe Island compare with yours? They are smaller, and we have all concrete floors.
1874. And you have inclined troughs for the conveyance of blood? Yes.
1875. Have you made an inspection of the abattoirs in any of the other colonies? No.
1876. You have not seen any of them? No.
1877. What is your opinion in regard to the droving of cattle from the sale-yards at Homebush to the Abattoirs at Glebe Island? I myself have seen cattle leaving Homebush. They go by road to Five Dock, and stop there, about 200 or 300 at a time. They are put into paddocks there with not a blade of grass upon them, and are afterwards driven to the island between 3 and 4 o'clock in the morning, and the killing of them is begun straight away.
1878. What is your opinion in regard to the quality of the meat slaughtered under such conditions? I do not think that the cattle are fit to kill at all.
1879. You think that if cattle are driven for some distance, and then put into yards, and killed almost immediately afterwards, the quality of the meat is deteriorated? I am positive of it.
1880. What would you suggest as a better method than that now adopted in cattle-killing at the Abattoirs at Glebe Island? Something similar to our chilling works. I think you ought to have one depôt in Sydney, and that all the bullocks and sheep required for the markets should be killed in different country towns.
1881. Your opinion is that it is unnecessary to have a slaughtering-place so near the city as Glebe Island? I am positive of that.
1882. But how would you manage about the slaughtering of pigs and calves? I send lots of pigs from Tenterfield.
1883. And you would be quite capable of killing pigs and calves, and sending them to the metropolis with the same amount of confidence as cattle? I have done it. I have not had any loss this year. We kill pigs, calves, and poultry.
1884. Do you think that the Glebe Island Abattoirs are too far away from the cattle sale-yards at Homebush? Yes; I think so.
1885. You think that the quality of the meat would be considerably improved if the abattoirs were in closer proximity to the present sale-yards at Homebush? I think the cattle get more harm done to them before they get to Homebush, by the way in which they are rushed into the trucks, and afterwards knocked about and shunted on the railways. They are sometimes shunted, and left for a whole day in a hot, boiling sun.
1886. Do you think that the present method of trucking cattle to the sale-yards at Homebush is as injurious to the cattle as is the droving of cattle from the sale-yards at Homebush to the Abattoirs at Glebe Island? Yes.
1887. Your experience, then, is that the trucking of cattle alive is not beneficial? I am certain of it.
1888. Do you think it would be possible to conduct abattoirs in close proximity to the present sale-yards at Homebush without their proving a nuisance to the surrounding districts? I do not think you could conduct abattoirs close to the sale-yards without their being a trouble to the suburbs. I do not think you could get enough drainage there.
1889. Do you think that it is not possible to conduct an abattoirs in such a cleanly manner as for them to be completely free from any smells which would be objectionable to the surrounding neighbourhood? No; not about there.
1890. Could they be conducted in any other locality without being likely to cause a nuisance? I do not think you could conduct abattoirs anywhere about the city and suburbs without causing a nuisance.
1891. Not with proper desiccating works? No, I do not think so; because you cannot desiccate a lot of the guts and other things. The offal from inside a bullock you cannot desiccate, and that has to be carted away.
1892. Would you be surprised to know that the whole of the guts and offal matter coming from the cattle and sheep and other animals killed at the abattoirs in Melbourne are put into the desiccating works, and converted into a marketable manure? In our works we empty the contents out of the guts, which we boil down for the owner. They make a lot of fat, and he gets the tallow, and we use the manure for our cultivation land.
1893. Have you desiccating works at your establishment? No.
1894. What do you do principally with the offal? We cart it away every day, and sell it to different farmers round about.
1895. To what use do the farmers put it? They use it for manuring their land. They bury the offal in the ground, and keep it for two weeks or so, and then spread it over their land.
1896. Does that not prove very offensive to the surrounding neighbourhood? No. I keep the paunches and boil them for the pigs.
1897. But you do not feed the pigs with the guts? No; we kept them for the owners. Suppose we put a diseased animal into the digestors to boil it down for the owner; that is called hashmagundy. When that comes out of the digestors we sell it to the farmers; it is one of the best manures for crops.
1898. What price do you get for that? As high a price as £2 a ton. 1899.

- A. R. Morton. 1899. Is that ground previous to sale? No, it is sold just as it comes out of the digestors.
- 10 Oct., 1896. 1900. Are there any inhabitants round about your works? Yes.
1901. Have you ever had any complaints? Never a word.
1902. Have you any idea as to why the company started these slaughtering works at Tenterfield? They thought they would get a better price for their cattle. They started these works when there was so much talk about the trucking of bullocks to Homebush.
1903. So these slaughter-houses practically belong to a co-operative company of squatters? Yes. We have leased them for seven years.
1904. So you do not buy the cattle? No, we kill them on owners' account; we do not buy at all.
1905. Your revenue, then, is derived by charging so much for the cattle killed? Yes, so much per lb.
1906. How far do you reckon your slaughter-houses are from the main line? They are close to the main line.
1907. Have you a siding? Yes.
1908. *Mr. O'Sullivan.*] I gather from your evidence that you think there would be no occasion for abattoirs in Sydney, because the meat could be supplied from chilling works in country districts? Yes.
1909. But, still, do you not think it would be necessary to have abattoirs in or about Sydney for the stock that comes by steamer from the coastal districts, or from places in the vicinity of Sydney? I do not think there is any necessity to have abattoirs either in or about Sydney.
1910. But if we did not have abattoirs in a central place like Sydney, there would be a necessity for a number of chilling works in smaller localities? Quite so.
1911. Under these circumstances, do you not think it would be necessary to retain the abattoirs in Sydney for the purpose of dealing with cattle coming by steamer from other parts? I think it would be necessary, under those circumstances, to have abattoirs near Sydney; but I think that they should be either at Marrickville or at some place like that.
1912. You would prefer to have the abattoirs at some site other than Glebe Island? Yes.
1913. But if you were to remove the Abattoirs from Glebe Island you would not be able to land cattle immediately into the works as they can be now, but you would have to travel them to Marrickville? Yes.
1914. Would it not, then, be more costly and disadvantageous to have the site for the abattoirs at some place other than Glebe Island? I do not think so. It would not be far to drive the cattle. I think that Glebe Island is suitable for something better than Abattoirs.
1915. But, recognising the necessity for an abattoir in Sydney to treat the stock coming by steamer to Sydney, and the present Abattoirs being alongside the water near the wharfs, would it not be wiser to retain the Abattoirs where they are for the purpose of treating that stock without transshipment? I think that those Abattoirs would be altogether too large if chilling came into vogue.
1916. Supposing the Abattoirs were retained at Glebe Island, do you think it would be possible to render them not harmful to the public health? Yes. I do not think that they harm the public health very much now.
1917. Complaint is sometimes made about the noxious smell? Yes; because it goes to the Glebe at night.
1918. That could be prevented? Yes.
1919. As a matter of fact, in large cities like Glasgow and Chicago it is prevented? Yes; and it could be prevented at Glebe Island also.
1920. Referring to the chilling works in the country districts, you contend that the meat from those works would be more suitable for human food than meat obtained by killing cattle driven to Homebush, or taken in trucks on the railway to Homebush? I am positive of it. I am sure that meat coming from the country will make  $\frac{1}{2}$ d. per lb. more than the meat killed in Sydney.
1921. That meat would all go by rail? Yes, go by rail--dead.
1922. And the receipts from the railway traffic would be considerably increased if most of the meat used in Sydney came by rail instead of much of it coming by road? Quite so.
1923. So there might be an advantage to the State in that respect? Yes.
1924. You spoke of Marrickville as a possible site? Yes.
1925. What made you think of that place as a possible site? I have been there a number of times, and I saw a lot of good resting paddocks for cattle, and you could construct a railway siding to that place.
1926. How long should cattle rest? I always rest my cattle two clear days and two nights, and then they come into the slaughter-houses as they should be--they are not heated at all.
1927. I gather from what you have said that you disapprove of having slaughter-yards near the sale-yards at Homebush? I disapprove of that altogether.
1928. Do you know the Newington Estate, on the Parramatta River? Yes.
1929. Do you think that that would be a suitable site? I do not like the idea of trucking at all. I think that trucking the cattle to Homebush injures them more than driving them from Homebush to the abattoirs, wherever these might be, would do.
1930. That is the reason that inclines you to disapprove of the idea of having abattoirs either at Homebush or Newington? Quite so.
1931. Have you any evidence of tick in this neighbourhood? No; I have not seen a tick since I have been here. I have had a lot of cattle from Queensland, but have not got a tick with them.
1932. The cattle you get from Darling Downs and other parts of Queensland show no sign of tick? No.
1933. *Mr. Wilks.*] I understand that your strongest objection to a city abattoirs is the slaughtering of meat in an inflamed state? Yes; the trucking of cattle makes them more or less bruised.
1934. Your objection is not so much to the present site of the Abattoirs as to what you have pointed out? Yes.
1935. Your objection would apply in the case of any central abattoirs? Quite so.
1936. Have you any acquaintance with the inspection of meat? Yes.
1937. Do you consider that it is at all rigid in the city? I think it is now.
1938. There has been weakness in the past? Yes; a very great weakness.
1939. Do you think that the number of diseased cattle going into the market is on the increase? I have seen the returns lately, and they are about the same as they were previously.
1940. Do you think that the inspection in the country killing establishments is what it should be? No; they are not inspected as they should be.
1941. The inspection therefore is a faulty one? Yes.
- 1942.

1942. What system would you suggest to get over that difficulty? You would have to have an inspector *A. R. Morton* present all the time from the time started until the time they finished killing.
1943. That is, under the direct supervision of the Board of Health? Yes. 10 Oct., 1896.
1944. Do you supply certificates with meat? Yes.
1945. What is required is, practically, systematic inspection? Yes.
1946. That is one of the most serious points in regard to the whole of the slaughtering done in the Colony? Quite so. You may say that we have not had severe inspection at all.
1947. Do you think that there is any danger of going to extremes in the matter of supervision? No.
1948. Nothing like running to seed in the matter of supervision? No; I do not think that any man has a right to eat diseased meat.
1949. Then, from your experience in the meat business, you consider that an inquiry of the character of that now being held by this Committee is a very essential one? Yes.
1950. *Mr. Bavister.*] Have you done any canning? No.
1951. What is the largest number of sheep you have killed in one day? 450 or 500.
1952. Have you had any experience of the working of a desiccating plant constructed on up-to-date lines? No; I have only seen the Glebe Island desiccating plant.
1953. If you heard it stated that large works of the description of those at Glebe Island could be carried on, in a centre of population, without causing a nuisance or annoyance, you would find it difficult to believe that statement? I should, certainly. I do not think you could do that.

MONDAY, 12 OCTOBER, 1896.

[*The Committee met at the Graziers Meat Export Company's Works, Queensport, near Brisbane.*]

Present:—

Mr. BAVISTER,		Mr. O'SULLIVAN,
Mr. LAW,		Mr. WILKS.
J. S. HAWTHORNE, Esq., IN THE CHAIR.		

John Vigers Francis, Esq., examined:—

1954. *Chairman.*] You are the manager of the Graziers Meat Export Company's Works, Queensport? *J. V. Francis*. Yes. 12 Oct., 1896.
1955. How long have you been manager? I have been more directly connected with the works the last five months. Mr. Harry Baynes was the manager before I took charge, when he went to London.
1956. You are a member of the firm? Yes, the firm consisting of four individuals.
1957. And the late manager was also a member of the firm? Yes.
1958. Is your company an English one? It is a private firm—a sort of family affair.
1959. Were you a resident of this Colony before you were connected with these works? Yes; I have been here twenty-one years. I am a native of South Australia.
1960. Your partners in the firm are also natives? Yes. They have been here twenty-one years.
1961. Your trade is principally export? Nine-tenths of it is export.
1962. You confine yourself principally to mutton and beef? No, we trade in mutton, beef, veal, pork and lamb.
1963. Do you supply the Brisbane butchers with meat? Yes.
1964. In addition to your canning business, you also do a large wholesale business with local butchers? Yes, we supply twenty carcass butchers.
1965. And those carcass butchers, in turn, supply the butchers of Brisbane and its suburbs? Yes.
1966. I suppose your canning is done principally for export? Yes.
1967. You have a colonial trade as well? Yes; a very large colonial trade. For Queensland alone we do about 100 cases a week; 72 lb. in the case.
1968. Do you do much in the other Australian colonies? About 1,000 cases a week for Western Australia, about 500 cases a week for New South Wales, about 2,500 cases a week for Victoria, about the same for Tasmania, and about 200 cases a week for New Zealand.
1969. How many hands do you employ in connection with your business at these works? 622 hands last Friday.
1970. Have you any hands employed elsewhere? Yes; we have 1,100 hands employed altogether.
1971. Your establishment is kept going night and day? Yes; we start about 6 o'clock on Sunday afternoon, and we stop about 4 o'clock on Saturday afternoon.
1972. Where are the other men employed? We have a cooperage in South Brisbane, where about seventy-five hands are employed, and we have a fellmongery at Belmont, where we employ 120 hands. Belmont is about 3 miles from these works, and we have a large farm there, and grow all the fodder for the piggery.
1973. From where do you generally draw your supplies of cattle? Chiefly from the north and the west of Queensland.
1974. They come to you by rail? Yes. From stations 200 miles from Brisbane we bring them in by road.
1975. Have you any paddocks attached to the works here? Yes; 6,000 acres just behind the works.
1976. Have you railway communication to your works? Within a quarter of a mile of them.
1977. When the cattle have been taken from the trains you allow them to remain in these paddocks, for how long? Two or three days. It depends on the season. When the weather is very dry we allow them to remain there only two days, but in a good season they are fed about a fortnight in the paddocks.
1978. The longer the cattle are kept in the paddocks the better the meat? Yes; the flesh is not inflated.
1979. *Mr. O'Sullivan.*] What population is there living (say) within half a mile of your works? About 500, and 1,000 within 2 miles.
1980. Do the surrounding population complain of any nuisance or bad smells arising from the works? I have never had a complaint since I have been here.
1981. Do your desiccators and other appliances prevent, to a large extent, smells that would otherwise arise? Yes; you smelt, to-day, the only smell that exists, and that is caused by vapour. When the men open the digestors, the vaporous heat causes that smell; otherwise there is no smell at all. 1982.

- J. V. Francis. 1982. When we got to what you call the hashmagundy soup department, that was the most offensive portion of the works? Yes.
- 12 Oct., 1896. 1983. Do the men who work there complain of any evil consequences? None whatever; as a matter of fact they are the most healthy. I have never known a case of sickness.
1984. To what do you attribute that? There are thirty-two men employed round about the digestors. I have never had a case of sickness amongst them, and they have always the best of appetites. I think that the smells destroy germs that would otherwise cause illness. The same remark applies to our fellmongery, where we have never had a case of typhoid fever, or any other disease. The men there are very strong, and there is more smell there than there is at these works.
1985. So on the whole, although these smells may be offensive for the moment, the consequences are not detrimental to the health of the population? No; I think, just the reverse.
1986. So if we were to establish an abattoirs in Sydney, by adopting the same appliances you have here, we could prevent any offensive consequences that might otherwise result from the ordinary working of such an establishment? Yes.
1987. You indirectly supply all the retail butchers in Brisbane? Well, the majority of them.
1988. And no complaint is made by the population there about the quality of the meat they receive from you? No; they always consider it is the best meat they receive, and the carcass butchers with whom they deal give that as a reason for asking higher prices for the meat.
1989. You spoke of employing 1,100 hands in connection with your establishment? Yes.
1990. How are those 1,100 persons employed? There are 622 at the works at Queensport, 125 at the scouring works at Belmont, 3 miles to the east of these works, and there are seventy-five at the cooperage; and then we have our own establishment for plumbing, coach-building, &c., employing about twenty-five hands. We have also about fifty private shops where we retail the meat in Brisbane and suburbs, as far as Southport, averaging from four to six men in each of the shops. Then we have about sixty drovers, and about sixty men employed at the head shop, where our chilling and salting rooms are. We also have selections for our cattle where about thirty men are employed, and we also employ about thirty carpenters. We are always building, taking down, and putting up shops, and we keep thirty carpenters constantly employed.
1991. So I understand that the 1,100 men to whom you referred include the 622 men you have at the works at Queensport, and also the men employed in the retail shops, cooperage and plumbing works, and other places outside, but all connected with you directly? Yes; and in no way connected with any other firm.
1992. Your establishment seems to be supplied with all the modern appliances to prevent stench and all other objectionable things? Yes; being in a thickly-populated neighbourhood we have to be very careful in that respect.
1993. Do you think that if the same appliances were used at an abattoirs within the bounds of a large city like Sydney, they would be as unobjectionable as they are at Queensport? Yes; if used in Pitt-street, I think they would be not at all objectionable.
1994. Your opinion, as a man of experience, is that it is quite possible to work a slaughtering establishment like yours without detriment to the health of the population? Quite so. If anything, I think it is the other way about, and assists the health of the population. My experience is that we have less sickness than there is in a boot or any other factory.
1995. As a matter of fact, it is a somewhat peculiar thing that men employed in the slaughtering or the selling of meat generally appear to be very healthy? They not only generally appear to be, but they are healthy. They are a healthier lot of men than other men, as you can see from their complexions. We have had men come from the southern colonies for the sake of their health, and in every case during the first six months of their being here they have gained from 4 to 6 stone in weight. Even very delicate men become big strong fellows in six or nine months.
1996. Then it follows from what you say, as a man of experience, that working in a slaughtering establishment, or living near one, is not injurious to the health of those who work in or live near such an establishment? No; the contrary. I say this from my experience of twenty-one years. The healthiest portion of the community live near us.
1997. Do you know anything about the Abattoirs at Glebe Island? Yes; I have been all through them.
1998. Do you think that the existence of Abattoirs at Glebe Island, near a population situated at Balmain on the one side and at the Glebe on the other, would be likely to injure the health of the inhabitants of those places? No. There is nothing there to injure health. But, in my opinion, the appliances there for dealing with manure were obsolete. I think that the Abattoirs authorities could deal with the manure more profitably than they are now doing—they could make a profit out of them.
1999. What suggestions would you make to bring up-to-date the machinery at Glebe Island for the treatment of manures and all refuse from the Abattoirs? I should recommend the Abattoirs authorities to write to the Americans, who have splendid machinery; they ought to write to the authorities at Chicago and elsewhere, in order to get a desiccating plant to treat the refuse well and at once.
2000. You think that that if the large city of Chicago, with over 1,000,000 inhabitants, can maintain the health of its population side by side with large slaughtering establishments, it is quite possible for the city of Sydney, with only about one-third of that population, to do the same? I am sure it is.
2001. Provided they have the same modern appliances for destroying the offal and other offensive matter? Yes. You want to treat it at once. You must treat it before it decomposes. The fault of some manures is that they are not treated before they decompose. Within twenty hours from the time a bullock is alive our manures are treated. The great fault of many meat works is that they do not treat their manures before they decompose. Once decomposition sets in you cannot hope to do any good with your manure. You must treat it instantly. Our manure is fresh, and not decomposed at all. In our stores, where you saw the bags of manures, they might have been bags of flour for any odour that escapes from them. If I had told you that they were bags of flour you would have accepted the statement, and yet those are all bags of our special fertiliser.
2002. Then are we to understand that, putting aside the temporary offensive odours that arise from hashmagundy, your establishment is not a permanently offensive place to the inhabitants of the district in which you carry on business? No. Any offence that arises is only from the vapour from the hot water. There is no offence from the material itself. You could take that away from the heat, and there would be no offensive smell whatever. 2003.

2003. From what we have seen to-day at your establishment at Queensport it is evident that within six hours from the killing of a bullock or sheep the product would appear in the final form of manufactured food ready for the table? Yes. J. V. Francis.  
12 Oct., 1896.

2004. And during that time there is nothing offensive or dangerous to human health? No, there is not. The only offensive result would be if it were not treated at once.

2005. Then what I understand you to say is that, provided the refuse is treated promptly, there is no danger whatever to human health, but if it be allowed to decompose there is a danger? Of course there would be, naturally.

2006. And therefore, if the Abattoirs at Glebe Island, near Sydney, were carried on in a prompt manner, it might be possible to get rid of all the offensive and injurious matter in a short time, and thus to avoid doing any injury at all to the health of the inhabitants around that place? You would not have to get rid of it, because it would not exist. It only arises from decomposing matter.

2007. *Mr. Wilks.*] Do I understand that you supply a large quantity of meat to butchers in the city? Yes; I suppose we supply two-thirds of the meat consumed in Brisbane.

2008. How many cattle do you put through at one time both for your meat-preserving trade and for the city supply? We have averaged for the last four months 230 bullocks a day, and about 750 sheep.

2009. What system of inspection have you for the detection of diseased animals? Dr. Quinnell inspects every beast.

2010. He is the sole inspector? Yes; he appoints our head slaughterman to pass a beast in his absence. He has thoroughly posted him up, and he has learnt all that could be learnt under the inspector, and if there is the slightest doubt about a beast he puts it on one side if the inspector is absent; but if he is of opinion that there is no danger he passes it on.

2011. I understand that there is one inspector appointed by the Government, and also an assistant inspector, who is a slaughterman in your employ? Yes; in my employ, but appointed by Dr. Quinnell.

2012. What percentage of animals are condemned? Last month we had 175 bullocks condemned out of about 6,000 head.

2013. What were the principal diseases? Tuberculosis was the principal disease—114 were condemned for tuberculosis, and some for actinomycosis, and some for abscesses.

2014. What is the process adopted when they are condemned? They are taken to the digestors.

2015. They are not saturated with kerosene, as is done in some works? No; they are cut up into pieces and put into the digestors.

2016. You consider the inspection of meat a very important matter? Yes, very important, and very necessary to the health of the public.

2017. Do you find that the percentage of diseased animals is on the increase? I find that the percentage of diseased animals is according to the stations. Some stations have neglected the culture of their cattle, and have allowed disease to spread. From some of the stations we have a far larger percentage of diseased cattle than from others—up to 3 per cent. from one station.

2018. From what you have told me, I should imagine that you would consider an inquiry of the character now being held by this Committee an essential one? A very essential one.

2019. You consider that up to date the Colonies have neglected this matter of meat supply? Yes; almost criminally neglected the inspection of meat.

2020. And the inquiry now being held by this Committee is one that should have been taken in hand some time ago? Yes—twenty years ago.

2021. Not only by New South Wales? No; by all the Colonies. I think it is criminal on the part of the Government to allow a single beast to go into consumption without previous inspection.

2022. Your sole trade of an export character is that of preserved meats? No, not our sole trade; there are tallow and hides.

2023. Well, by-products and preserved meat? Yes, and wool-scouring.

2024. You do not freeze meat? No; we chill meat.

2025. That is not so profitable? No, our experience is a loss.

2026. Are you called upon for any certificate? Yes; in all our contracts we have to furnish a certificate for every tin of meat put up in our works.

2027. I understand that there is a Meat Export Act in force in this country? Yes; not a single tin of meat can be sent out without a certificate.

2028. There is not a Board of Health, but regulations under the Export of Meat Act? Yes; it is criminal for us to send away a single tin of meat without its being inspected. We are liable to a fine of £50 or imprisonment.

2029. I understand that a lot of your trade is by contract? Yes; I suppose about one-third of it.

2030. Principally with Java, the Dutch Settlements, and the French colonies? Yes.

2031. Your trade directly with London is not so great? Our trade with London is very large—10,000 cases a month, and it is increasing.

2032. Now, coming to the matter of desiccation, you consider that a high-class desiccating plant is one of the greatest essentials of a well-appointed abattoirs? Yes; it is absolutely necessary.

2033. Do you consider that your desiccating plant is a high-class one? No; ours is not a high-class one.

2034. Do you consider that it is better than the desiccating plant at the Glebe Island Abattoirs? I consider that the desiccating plant there is obsolete. There is unnecessary expense attaching to the work of it.

2035. Your plant is an improvement upon that? Yes; our plant is a labour-saving plant altogether.

2036. When inspecting the Abattoirs at Glebe Island, did you notice that the desiccators there had to treat an enormous quantity of water, which you avoid doing? Yes; we treat no water. I consider that the desiccating plant at Glebe Island is obsolete, because the expense is something ferrible. Our expense is not 5 per cent. of the value received; but the expense at Glebe Island was 105 per cent., because the desiccators there were worked at a loss.

2037. Even with your plant you can make a profit? We make a profit of 95 per cent. as compared with Glebe Island.

2038. Have you a ready sale for your manure? Yes. We put up 60 tons a week, and the only stock accumulated is about 200 tons.

2039. And this is owing to the tick scare in New Zealand? Yes. We had a contract there for 300 tons for three months, but the Government there will not allow our manure to come into New Zealand.

- J. V. Francis. 2040. They are so afraid of the tick that they have stopped your trade with New Zealand as regards manures? Yes; it is, of course, most absurd.
- 12 Oct., 1896. 2041. *Mr. Law.*] You do all your own cooperage work? Yes.
2042. And I suppose that you find that you can do it much cheaper, doing the whole of the work connected with the concern? Yes. When we first started our works we found that competition was nearly prohibitory, through the cost of the casks. We preserve very largely salt beef. One of our largest contracts with the Dutch Government is for salt beef. We found that the cost of the casks was prohibitory of our competition against the Americans. I got special machinery at the cooperage, and now as regards the expense of labour we can put up five casks where we could put up only one before—that is, a cask that cost us 9s. before costs us only 2s. to-day. Therefore, we are in a position to compete successfully against the Americans in sending meat to Canada. We have a very large salt-beef trade with the South Sea Islands through Sydney, and also with Java, and we send about 100 300-lb. tierces to London every month, under order for the shipping trade.
2043. You make your own tins? We manufacture everything required. We thus effect a great saving. We could not possibly successfully compete against America if we did not manufacture all our own tins and solder. I may mention that the Government of Queensland have thought fit to put a duty of 25 per cent. on ingot tin. This has caused us to take out of our own pocket and to pay to another smelting-works here at the rate of £1,000 per annum. The Government do not benefit by the 25 per cent.; it is simply a bonus to that company. The Government, instead of paying those smelting-works a bonus of £1,000 a year, make us pay it. There is only one tin-smelting works, and the Government compel us to buy from those works; otherwise, we could land tin from Tasmania at £8 a ton cheaper than we can get it from Queensland. But we should have to pay £15 a ton duty to the Queensland Government. The Government compel us to pay this bonus to that company, because some of the members say that that company has done a lot for mining. But why the meat-preserving works should compensate that company for what they have done for mining I do not know. It has been a great drawback to us.
2044. In regard to your desiccating plant, do you not think that there is more modern and better machinery than you have in your establishment at the present time? Yes.
2045. I believe that you have contracts with various Governments;—can you name all the places? We have three different contracts with the French Government, according to the different colonies—Haiphong (a China port), New Caledonia, and New Hebrides. We have also contracts with Batavia, which amounts to 700,000 kilos of meat per annum.
2046. At your wool-scouring works have you a good water supply? Yes. In wool-scouring, in order to make the works pay, it is necessary, after taking the skin off an animal, to treat it immediately, before the skin dries and cracks. If you delay the treatment the basil is not worth within 25 per cent. what it would be if you treated it at once.
2047. There are only four members of your firm? Yes.
2048. Has it grown from a small concern to a big one? Yes. When we first started business in 1859 we were killing only twenty-five bullocks a week, and it has gradually grown from that to its present dimensions.
2049. Will you explain the process of making oleomargarine? It is necessary that you should have no dirt whatever. Oleomargarine is analysed, and the slightest percentage of dirt would cause the article to be refused.
2050. Would you name the different articles made at your establishment? There are about eighty varieties.
2051. Can you tell me approximately the total cost of your works? About £75,000, including the area of ground.
2052. What is the total value of all sorts of products at your establishment in one year? £300,000.
2053. Have you any objection to telling me whether your business is a paying concern? Well, we would not carry it on if it were not.
2054. You work your establishment night and day? Yes; I suppose we have the best electric-lighting plant in Brisbane.
2055. You have the electric light right through the establishment? Yes.
2056. *Mr. Bavister.*] You stated in reply to questions that your manure was selling at £3 a ton locally for large orders? Yes; we deal only wholesale in manures.
2057. What is the cost involved in treating the material resulting in 1 ton of manure? About 3s. a ton.
2058. Do you mean 3s. per ton of material treated, or 3s. per ton of manure produced? About 3s. per ton of manure as we sell it.
2059. You stated that the inspector recognised by the Government is appointed by the Government? Yes.
2060. And he appoints as sub-inspector a person in your employ? Yes.
2061. And who is in your pay? Yes.
2062. Do you consider that that is conducive to satisfactory inspection? Yes. I think it is most necessary to.
2063. It may be necessary, but should not an inspector occupy an independent position? The Chief Inspector should. And considering that the Chief Inspector is there day and night at all times, if he found a bullock run down the race which had not been laid aside for him he would easily detect at any moment if the man he trusted had not done his duty.
2064. You say that the Chief Inspector is continuously on the works? Yes, night and day. We do not know when he is coming, and whether he is or is not there; the slaughter-man puts on one side anything questionable until he has inspected it.
2065. How far from the works does your Chief Inspector reside? About 2 miles.
2066. On the opposite side of the river? Yes. He has a boat.
2067. Has he stated times for visiting? No.
2068. But if occasion requires he is specially summoned? Yes.
2069. Are you called upon to contribute anything towards the payment of the inspector? Yes.
2070. What form does that payment take? So much per head on the cattle slaughtered.
2071. Would you mind stating the amount? Threepence per head for bullocks, and, I think, 3d. for every ten sheep, which I think is iniquitous, for it amounts in our business to £1,200 a year, and the inspector gets only £300 a year. Therefore the Government are making £900 a year at our expense, and we have to suffer the loss of the rejected cattle, which at the present time amounts to over £5,000 a year.
- 2072.

2072. Have you no arrangement as between the persons from whom the cattle are purchased and your firm as to sharing the loss on condemned cattle? No; we have to make our deals twelve months ahead, and up to the time when the Act was brought into force five months ago we had no idea of the Act coming into force, and therefore we did not protect ourselves, and this has caused us a loss of £2,000 up to the present time. In future deals I intend to make that condition; but we find it is difficult to make a deal, because the stock-owners object to that condition.
2073. In reference to the speed at which meat can be prepared, I think you stated that five hours was the shortest time? Yes.
2074. That is owing to the temperature of this locality? Yes.
2075. If the climate allowed you to do so, you would prefer to give a much longer time? Yes, at least twelve or fourteen hours.
2076. Do you think that the health of the persons who consume your meat would be better served by that meat being slaughtered and put up in a cooler climate? I do not think it makes the slightest difference. In our retail business the meat is not given to the public until fourteen days after it is killed; but in the tinning it does not make the slightest difference.
2077. Is there any private slaughtering, or any slaughtering done by small butchers? Yes; one-third of the Brisbane trade is done by private slaughtermen.
2078. And they are people in a small way of business? Yes.
2079. For instance, a butcher whose business required him to kill only one beast twice a week could do so? Yes; none of the private places are under Government inspection.
2080. Is any restriction imposed as to where and when cattle may be killed? No; outside the meat exporters of Queensland there is no Government inspection, or any Government control at all—that is, all butchers who are not meat exporters have not their premises under any inspection whatever, and they can kill anything they like, and sell it. The Act is only an exporters act. There may be tuberculosis or anything else, and as a matter of fact tuberculous meat goes into consumption in Brisbane every day.
2081. In connection with what you last stated, is it possible for a carcass or a portion of a carcass, after having been condemned for export purposes, to be broken up and to go into local consumption? No, it is not possible, because the Government inspector sees it is destroyed.
2082. But for local consumption there is no inspection of any kind? None whatever.

David Traill, examined:—

2083. *Chairman.*] What are you? I am manager for the Queensland Meat Export and Agency Coy., Eagle Farm Works, Brisbane River.
2084. How long have you been in that position? Three and a half years.
2085. Had you a knowledge of the meat-chilling business previous to taking charge of those works? No.
2086. Your works at the present time are at a stand-still? Yes.
2087. But you have done a very large trade in the past? Yes.
2088. What is the largest number of cattle that you have killed at your works in any given week or month since you took the management? 320 head per day; that is the most we have done.
2089. The cattle, I suppose, come to you by rail? Some by rail, and some by road.
2090. From where do you generally get your stock? We get all our stock from Queensland.
2091. You have also done a large meat-killing trade in mutton? Yes.
2092. At any time during the progress of your works has any complaint been made against them of being a nuisance to the surrounding district? Never.
2093. What do you do with all the offal and other refuse that comes from the animals that are killed? The offal is treated first for tallow, and then for manure.
2094. Is your trade entirely one of export? Entirely.
2095. You do not cater at all for the Brisbane butchers? No.
2096. Is it with the other Australian colonies or with the English and continental markets you have to deal? Entirely English and continental markets.
2097. Have you a rigid inspection of the meat killed in your establishment? Yes; a very rigid inspection.
2098. By whom? By the Government Veterinarian.
2099. How frequent are his visits when you are killing? Every day.
2100. Does he inspect every animal brought in for killing? Yes.
2101. Before or after death? Both before and after death.
2102. And it would be impossible for you, even if you desired it, to slaughter a diseased animal without his knowing it? It would not be impossible for us to slaughter a diseased animal, but it would be impossible for us to treat it after death without his knowledge.
2103. What was the percentage of animals condemned when you were killing (say) 350 a day? The average number condemned is about 2·2 per cent.
2104. That loss is entirely borne by your Company? No; it is not. Our Company do not make a business of buying stock. We have bought stock, but we mostly treat for clients.
2105. You kill stock for your own clients? Yes.
2106. And charge them so much per head for killing them and keeping them in the refrigerating chambers? Yes.
2107. Your clients are principally the pastoralists of Queensland? Yes.
2108. Is your Company a colonial-formed one, or representative of English capital? Colonial.
2109. Principally got up by the pastoralists themselves? Yes.
2110. *Mr. Wilks.*] Would you mind stating the main reason for the closing of your works? The principal reasons are the dearth of fat stock and the low prices in the London market.
2111. You do not find it sufficiently profitable to treat mutton to warrant your going into it to any extent? Of course, my answer to that question is contained in the answer I have already given. We merely make a certain charge upon meat put through our works.
2112. Then the inference to be drawn from that answer is that owners of that kind of stock do not consider it profitable? Not at the present moment.
2113. This is not a mutton-producing country? I would not say that, but our works principally deal with beef.

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2114.

- D. Traill. 2114. This is not a mutton-producing country, compared with Victoria or the southern portion of New South Wales? No; it is not.
- 12 Oct., 1896. 2115. Has the tick fever been detrimental to meat? Not at our particular works.
2116. Only to the owners of stock? Yes.
2117. And many of the owners who use your works are within the infested area? Most of the pastoralists who put their stock through our works are south of the infested districts.
2118. In the matter of inspection, could you suggest anything to make it more rigid? I could suggest nothing more.
2119. You do not think that anything more is essential? No.
2120. Do you think there is a danger of too much Government inspection? Yes.
2121. You think it is a matter that may be allowed to run to seed, and become a fad? Yes.
2122. You are not acquainted with any diseases of the human family which are traceable to the consumption of diseased meat? No.
2123. As regards an inquiry, such as we are holding, in reference to the supply of meat in New South Wales, do you consider that the question is of sufficient importance to warrant the attention that is being given to it? Yes; I think it absolutely necessary that there should be Government inspection.
2124. Do you consider that the city of Brisbane has sufficient inspection in regard to the home supply of meat? We have no inspection in Brisbane as regards the home supply of meat, with the exception of one firm (the Graziers' Meat Company), and the inspection is apparently optional on their part.
2125. You think the same regulations as are applied to the export trade should be applied to the home trade? Yes.
2126. *Chairman.*] Do you think it is necessary that well-conducted abattoirs should be connected with the railway system, for the purpose of having stock brought to them by rail and for the conveyance of meat required for the supply of a city? Not necessarily.
2127. Do you think it is advantageous? Yes, advantageous, but not necessary.
2128. Your establishment is not at present connected with the railway? No; our works are not at present connected with the railway, but they will be in about three months' time.
2129. *Mr. O'Sullivan.*] What we want to know, amongst other things, is whether works like yours can be carried on without prejudice to the public health;—you have a fairly large population round about your works when they are in full going order;—does the operation of your works in any way injure the health of the inhabitants around you? No.
2130. I presume that is the case, because you are pretty well supplied with modern appliances for dealing with all the refuse connected with a slaughtering establishment? Yes.
2131. And what you do in a small locality like yours it would be possible to achieve in a crowded locality like that of Sydney? I am of opinion that it would not be injurious to the public health, but, at the same time, I do not think it would be advantageous to the public health.
2132. But do you think that the carrying on of slaughtering operations, if properly safeguarded as they are in large cities like Glasgow and Chicago, and other large centres of population, is really injurious to the public health? I do not think so.
2133. I gather from your evidence that, as a rule, throughout the year you are very busy at your works? Yes.
2134. And are carrying on a large meat export trade abroad? Yes.
2135. Then, by the same rule, it would be possible for us in Sydney with our abattoirs, not only to deal with the meat trade required for the city, but if necessary to establish there also a meat export trade, by working on the same lines as you do? Yes.
2136. Do you think that it would be better for the public health in a large city for it to be supplied with meat from killing works carried on in country districts rather than from abattoirs near the city where meat would be freshly killed? If the cattle were carefully driven and got sufficient food on the way to the works, I do not think there would be any material difference.
2137. How do you get your cattle down to your works at Eagle Farm? A very large number of them come by rail, and at certain times of the year a very large number are driven to the works.
2138. Where are they driven from? From stations as far away as twenty days' journey. I daresay that the average travelling time to our works would be about eight days.
2139. After the cattle have arrived near your works do you rest them for any period? Yes; for not less than two days.
2140. Do you consider that two days' rest is sufficient for them before they are killed? Yes; provided they get sufficient quiet and the necessary water.
2141. But can you assure them of that in a country like yours? Yes.
2142. Then you have plenty of grass and water? Near the works we have no grass. We do not want to feed the cattle for a couple of days prior to death, but we want to give them plenty of water. The cattle should be thoroughly rested for not less than two days in a locality where they will not be disturbed either by people on foot or by passing vehicles; in fact, they should be kept entirely secluded.
2143. They ought to be kept away from all disturbance or interference for at least two days before death? Yes.
2144. In your works, you utilise modern appliances for getting rid of the refuse? Yes.
2145. Do you think that you have the latest appliances for that purpose? Yes; we have the latest appliances for treating everything in our works, which are the most modern in Australia.
2146. Then if we had in a large city the same kind of machinery as you have, and under equally skilled men, we could utilise the refuse from the cattle that were slaughtered, in the same way as you do, without any injury to the public health? Yes.
2147. *Mr. Bavister.*] Previous to the outbreak of the tick disease and the restrictions imposed in consequence of it, your establishment was being carried on to its full capacity—at a profit or a loss? As I have already said, we kill only for the owners of the stock.
2148. *Mr. Law.*] What is your opinion in regard to the outbreak of the tick disease—has it had any injurious effect? It has had an injurious effect on the meat export trade of the Colony.
2149. Has it had an injurious effect on your company? Yes.
2150. Have you suffered any considerable loss by it? I may say that the stock does not belong to our company. We only treat the stock on behalf of the pastoralists. Our works deal with the pastoralist's stock, and we charge them a certain price—1½d. per lb. The effect it has had on our works is that at the present time our works are idle.

2151. What has been the total cost of the whole of the machinery and plant in connection with your works? Our works at Eagle Farm have cost us about £75,000. I consider that our works, so far as the abattoirs portion of them is concerned, are the most perfect in Australasia.
2152. Is it a fact that you do the largest meat export business in Australasia? Yes; the Queensland Meat Export and Agency Company has the largest export trade in Australasia in regard to bullocks—that is, we export the largest number of tons.

D. Traill.  
12 Oct., 1896

TUESDAY, 13 OCTOBER, 1896.

[The Committee met at J. H. Geddes, Birt, & Co.'s Brisbane Markets, Musgrave Wharf, Brisbane.]

Present:—

MR. BAVISTER,	MR. LAW,
MR. O'SULLIVAN,	MR. WILKS.

J. S. HAWTHORNE, ESQ., IN THE CHAIR.

John Genge Andrews Peddle, examined:—

2153. *Chairman.*] You are the manager of this company? I am the outside manager of their business in Queensland.
2154. For what purpose has the business been started? Chilling and freezing meat for export.
2155. Were you ever connected with any of the firm's establishments elsewhere? Yes; the Charleville Meat Works on the Warrego, 483 miles from Brisbane.
2156. Have you had any previous experience in the meat trade? No; only in squatting.
2157. Have you ever visited the Abattoirs in any of the other Colonies? Yes.
2158. Have you visited the Glebe Island Abattoirs? Yes; about a fortnight ago.
2159. Did you make a fairly minute inspection of them? I did. I went round with Mr. McAdam, the manager of the Darling Harbour works.
2160. He is the manager at Darling Harbour for the firm you represent here? Yes.
2161. What was your general impression of the Abattoirs—was it a favourable one? No. I thought the place was fairly well regulated, but there was not sufficient room.
2162. Did that apply to the slaughter-houses for the smaller as well as for the larger animals? The best place I saw was where they were killing sheep for export.
2163. That is the place which is known as Elliott's slaughter-house, and which was originally intended for a refrigerating house? Yes.
2164. What was there about that more striking than the others? There was more space. But still I considered that that was a poor place.
2165. Do you think that, so far as space is concerned, the Abattoirs at Glebe Island could be so altered and added to that, with modern appliances, they could be made suitable for, and would meet the requirements of, first-class abattoirs? I do not think so. You would have to commence *de novo*.
2166. Do you think, then, that, to make complete and satisfactory abattoirs, it would be necessary to pull down the present buildings? I should do so, certainly.
2167. Would it be possible so to improve the present slaughter-houses at Glebe Island as to make them up to date? No.
2168. No matter how much money was expended upon them. No. You could only build them afresh on the same ground.
2169. Do you know the cattle sale-yards at Homebush? Yes.
2170. Have you any idea of the distance between the sale-yards and the Abattoirs? I heard you say it was 6 or 7 miles, but I should have thought it was 10. I know that the sale-yards are on the other side of Strathfield.
- 2171-2. You have visited the sale-yards as well as the Abattoirs? Yes.
2173. Do you think that the present Abattoirs can be managed satisfactorily whilst the sale-yards are so far away from them as they are at the present time? No; the Abattoirs ought to be near the sale-yards.
2174. In connection with well-conducted abattoirs, you think the closer the sale-yards are to them the better it is for the meat after the animals have been slaughtered? Yes.
2175. Do you think it in any way interferes with the quality of the meat after the animals have been killed if the cattle and sheep are driven for such a distance to be slaughtered as are the cattle and sheep which are now driven from the sale-yards at Homebush to the Abattoirs at Glebe Island? That, on the top of the previous knocking about, must add to the fever.
2176. So you are of opinion that a bullock might start from the pasturage ground in a healthy condition, and after being sent by rail for some hundreds of miles, and then being put into the sale-yards, and after sale being driven to Glebe Island for slaughtering, might in many cases become so affected in health that it would practically develop some kind of disease? I know it is very much better without the knocking about. I cannot say whether it would or would not develop any disease.
2177. It would to a certain extent be likely to injure the quality of the meat? Yes. Cattle are actually trucked from Charleville to Sydney. I have seen hundreds of cattle trucked in that way.
2178. Have you visited the abattoirs in any of the other Colonies? I was at the Melbourne Abattoirs twenty-five years ago.
2179. You have not seen them lately? Not for twenty-five years.
2180. Do you think it would be better for the cattle to be slaughtered in the country and taken in refrigerating cars to some central depôt? That is what I and my firm believe in, and we do so from a business point of view.
2181. Do you think that the tendency of the commercial world is to so alter the method of killing beasts for consumption in large cities that in the future they will be killed in the country districts near to the pasturage ground, and taken afterwards in refrigerating cars along the different railways to the centres of population? All people who are interested in having good meat believe in that. But people who have vested interests, like Pitt, Son, and Badgery, at Sydney, Brisbane, and Adelaide, are dead against it—that is where the trouble comes in. You are fighting the vested interests.

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- J. G. A. Peddle. 2182. *Mr. O'Sullivan.*] Your establishment here is for the purpose of freezing for the export trade as well as for the local meat-market for Brisbane? Well, that has been contemplated—at one time it was talked about.
- 13 Oct., 1896. 2183. One part of your building was designed for that? Yes; but as a matter of fact, they are not going on now with the internal fittings for that.
2184. Where is it supposed that your meat will be killed? Well, in the country we have feeders like Charleville. We hope to have another place later on at Roma, and stock fattened on the pastures near the coast will be killed within 5 or 6 miles of Brisbane. They will be fattened in large paddocks near Brisbane.
2185. The cattle will be brought down by train? No; they travel as stores down to the fattening paddocks, and then walk in. I suppose that 20,000 cattle are fattened within 100 miles of Brisbane every year—on the Logan.
2186. It is in contemplation to erect slaughtering establishments on the Logan River? Within a reasonable distance of Brisbane, or we may work here with some of the existing slaughter-houses.
2187. With those at Queensport and Eagle Farm? No, not Eagle Farm; but we may make arrangements with some of the people now slaughtering near Brisbane.
2188. Collins & Co. do slaughtering within a short distance of Brisbane? Yes; about 5 miles from here—that is the Pastoralists Butchering Company.
2189. Do people about there complain of offensive odor or nuisance? I do not think so.
2190. From your long experience, in various capacities, of cattle, do you think it is possible to work abattoirs near a large city without giving offence to the public? Well, you would have to desiccate the manure, and that sort of thing, to do it.
2191. Provided that the abattoirs were fitted with the latest appliances, and were lined with white tiles, and had proper drains to keep them clean? Yes; with good drainage, I believe it would be possible.
2192. I suppose you know that in some large cities abattoirs are carried on without offence? I have read so, but I have never seen a place where there was not some smell.
2193. *Mr. Law.*] Have you had any particular experience in connection with abattoirs? No.
2194. Have you any knowledge of the necessary machinery to carry on extensive works? I have only a general idea.
2195. Can you state, approximately, what the cost of machinery would be? No.
2196. You stated in regard to the Abattoirs at Glebe Island that they were altogether out of date, and that, in your opinion, if the Abattoirs were retained there, new buildings should be put up;—do you think that if the 30 acres now outside the buildings there were utilised, that that would afford sufficient space to deal properly with an output of 100,000 bullocks and 1,000,000 sheep a year? I think that, if there were no other objections, on that area you could put up a place that would deal with the meat satisfactorily.
2197. *Mr. Wilks.*] The trend of your evidence is in the direction of killing and chilling meat in the country? That is what I believe in.
2198. You consider that the public health is better served by that system than by any other? Yes; the people then get tender meat with all the juice in it.
2199. Do they get purer meat? I think so.
2200. That is, if you provide for regular and proper inspection? It should be, but I do not know whether it is enforced.
2201. Do you not consider that central abattoirs would provide a safeguard in the matter of inspection of meat? No doubt. You would have the one inspector, and officers under his eye there.
2202. Do you think that the inspection of meat in Australia is sufficiently rigid as regards meat for home consumption? I cannot say, but I think not. I have seen some stuff I would not like to eat.
2203. Then you are of opinion that in various parts of Australia meat is sent into consumption which should not be? I have not the slightest doubt about it.
2304. And one of the most serious things that could be taken into consideration is how to prevent that? Yes.
2205. Do you think that diseased stock in the Colonies is on the increase? In travelling in New South Wales for a few months a little while ago I saw more diseases amongst sheep than I ever heard of before. I lived sixteen years in New South Wales, and I have been thirty years amongst stock. Wherever I lived the country was healthy; but it seemed to me that in the part of the country I saw last year the sheep had worms and fluke, and lice, and everything under the sun—things I had never heard of previously.
2206. Then I understand that mutton which is placed on the market wants rigid inspection, because there is greater chance of disease in sheep than in cattle? The sheep I am referring to would never get fat enough to eat—they would never go into the market.
2207. Did you observe the system of inspection at the Abattoirs at Glebe Island? No.
2208. You did not go into that matter at all? No.

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Russell Sinclair, examined:—

- R. Sinclair. 2209. *Chairman.*] You are an engineer? Yes. I belong to the firm of Willdridge and Sinclair, consulting engineers, of Sydney and Brisbane.
- 13 Oct., 1896. 2210. Your firm has had a large experience in the construction of freezing works in different parts of Australia? Yes.
2211. Where are the principal works with the erection of which you have had to do? In North Sydney, Pastoral Finance Association, Kirribilli Point; Geddes, Birt, & Co.'s place, Pyrmont, Darling Harbour; the Young Chilling Works; the Dubbo Chilling Works; the Narrabri Meat-chilling Works; the Gunnedah Meat-chilling Works—all in New South Wales. In Queensland, the Bowen Meat-freezing Works; the extensions to the Townsville Meat Works; the extensions to the works at Eagle Farm; and we are now busy with the Charleville Meat Works and the present South Brisbane Works here, and we are putting up a complete establishment at Lake's Creek, close to Rockhampton.
2212. Have you made a study of all the necessary appliances for the preservation of meat when it is killed up country, and also for its conveyance to the sea-coast? Yes.
2213. That has been your firm's special study? Yes; we have had to do with all the largest works.
2214. Judging from your past experience, do you think that the tendency of men engaged in pastoral pursuits now is to have their cattle and sheep killed as close to the pasturage ground as possible, and then sent

sent to the seaboard by means of refrigerating chambers? That is undoubtedly the tendency, except where a person has a station close to the seaboard. The tendency is to reduce the trucking and travelling of the stock to as little as possible. R. Sinclair.  
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2215. Judging by that statement, you seem to anticipate that in the near future large abattoirs close to any city would be unnecessary? I would not go so far as that, because there is always a large quantity of cattle to be drawn from the surrounding district; but I would put the matter in this way: that the size of the abattoirs near any city will be very much less in future than it has been.

2216. *Mr. O'Sullivan.*] As an expert in machinery for abattoirs and meat-freezing works, do you think it would be possible for the Abattoirs at Glebe Island to be fitted up with modern appliances in such a way as to render it impossible for bad odours or nuisance to arise? Quite possible to put up machinery of such a character that you would not know that there was anything going on at all.

2217. What machinery would you suggest for the purpose of working a slaughtering establishment free from all offensive odours? For working an abattoir I should suggest that you should go in for chilling machinery to deal with the meat as soon as it was killed, and that for getting rid of the blood you should have machinery which would treat it and work it up into manure, and you should have machinery for treating the offal. The half-chewed grass and the paunches should be worked up. All the paunches, guts, and offal, and everything that cannot be utilised for butchers' requirements should be desiccated, dried and turned into manure.

2218. As rapidly as possible? Yes; at once. Each day's killing should be finished right off. All the offal, &c., should be treated immediately.

2219. As a matter of fact they do that at Queensland now, do they not? They do it, but they could go further than they do now. There are no works in the whole of Australia which do it so perfectly as I think they should.

2220. *Mr. Wilks.*] Have you any acquaintance with the desiccating plant at Glebe Island? I have seen it several times.

2221. Do you consider it is very defective? I saw it twelve months ago, and I then considered it was very poor.

2222. Would you recommend new machinery, or an improvement of that plant? Complete new machinery.

2223. What would be the approximate cost of it? That would depend on the number of cattle killed; but, roughly speaking, machinery to treat the offal from 100 head of cattle all at once would cost you about £2,000.

2224. Am I to understand that well-appointed abattoirs of the character you are thinking of, near a city, must have a refrigerating works? Yes; not freezing works, because freezing is only necessary for export.

2225. You consider it essential that chilling works should accompany abattoirs? Yes, I do.

2226. And that the bulk of the meat going into consumption should be slaughtered in the country? Yes. Where it is any appreciable distance from a town it should be slaughtered in the country.

2227. What is your opinion of Glebe Island as the site for abattoirs to meet the requirements you have described? It is quite suitable.

2228. It would also make a good shipping depôt for meat? I do not know about that. You could not get big ships up there without removing that permanent bridge.

2229. Did you go into the matter of the architecture of the Abattoirs while you were there? I know what it is.

2230. Do you consider it is faulty? I do not consider it is well-arranged at all.

2231. *Mr. Bavister.*] As proof of the possibility of carrying on abattoirs on an extensive scale without nuisance or offence to the public, you have seen such in England—at Birkenhead and Deptford—on a larger scale than anything you have seen in the colonies? Yes, much larger. At both of those places they deal with imported cattle, which has to be slaughtered without going outside the gates.

2232. And as a proof of the effectiveness of their desiccating plant, it is customary for them to treat the refuse from the fish markets? Yes.

2233. And that is done without offence? Yes; at Birkenhead, and without offence.

2234. And that is done in consequence of the machinery necessary for such work having been obtained? Yes.

2235. There is no obstacle in the way of the same thing being done in Sydney? No; none at all.

Patrick Robertson Gordon, examined:—

2236. *Chairman.*] What is your position in the Queensland Public Service? Chief Inspector of Stock. P. R. Gordon.

2237. You have been a great number of years in your present position? Since 1868.

2238. Your position has brought you in contact with the cattle and sheep business of the Colony? Yes. 13 Oct., 1896.  
I have been on two occasions despatched by my Government to Melbourne and Sydney to study the meat question.

2239. Did you visit both the abattoirs? Yes, in Sydney and Melbourne; but I visited the meat market principally.

2240. Did you go to the abattoirs at Flemington, near Melbourne? Yes; but a number of years ago that was.

2241. How long ago? In 1886.

2242. Did you find them, then, up to date? My business was principally in connection with the distributing market.

2243. Did you not investigate the abattoirs? Yes, I did.

2244. Did you find them cleanly? They were hardly so cleanly as the Abattoirs at Sydney.

2245. You think the Sydney Abattoirs had the advantage? Yes; but my principal object was to ascertain whether we could or could not get some means of distributing the meat, and do away with the wholesale butchers, as our trade here was principally in the hands of the wholesale butchers.

2246. Has the result of those visits of yours to the other colonies brought about any change in your meat supply up to the present time? No. I wrote a report, which the Government handed over to the municipal council.

- P. R. Gordon. 2247. And it is really not the fault of the Government so much as the municipal authorities that you have not had the public abattoirs before now? Quite so.
- 13 Oct., 1896. 2248. In your position of stock inspector you have long since recognised the necessity of having suitable abattoirs close to the city? Yes, particularly so in relation to inspection. For instance, Dr. Quinnell last month, at Queensport, condemned 111 animals, and when you consider that he does not condemn animals except when the disease is diffused, that is a large number. If the disease is localised, he condemns only the part in which the disease is localised, and lets the other go.
2249. Dr. Quinnell has been appointed only since your Legislature passed an Act providing for the inspection of all meat killed for export? Yes.
2250. So that, so far as the authorities are concerned, great care is exercised in regard to all meat killed for export, whilst the meat for home consumption, practically speaking, goes without the slightest inspection? The only inspection is under the 1834 Act, which was passed when there were only two towns in Australia, and that Act, practically speaking, applies only to cattle-stealing.
2251. So your experience leads you to believe that, at present, diseased cattle can readily be pushed on to the Brisbane market without the public having any knowledge of its being diseased? Quite so.
2252. You are also of opinion that the only means of preventing diseased meat from finding its way into the Brisbane market is by the establishment of central abattoirs, under either municipal or Government control? Quite so. As it is now, no man with a small capital can start butchering, whereas, if we had abattoirs, and reserved so many stalls for ordinary use, a man with enough capital to run a small place could start business.
2253. The way things are at the present time, practically speaking, a ring is formed in private circles, which can prevent a poor man from starting a butcher's shop in the city? Quite so. There is quite a monopoly here.
2254. You think it would be just as well for abattoirs at all times to be in close proximity to the sale-yards? Yes. We must have meat sent down here. Although I was a strong advocate for country killing and chilling, that would refer only to a certain part of the Colony. But the Brisbane meat supply is gathered from north and south, and the more you concentrate the killing the more chance there is of proper inspection.
2255. So you think that the meat supply for a large centre of population, such as Brisbane, Sydney, or Melbourne, must be under some recognised supervision to prevent disease? Yes; I am very firm in that belief.
2256. *Mr. O'Sullivan.*] Do you find that any cattle afflicted with tick make their appearance down this way? No; not for 600 miles from here. The nearest tick-infested place is Rockhampton, and that is only an isolated spot.
2257. The latest information about the tick is that it is abating considerably? Yes.
2258. And on the western plains, where there is lots of sunshine, it is almost extinguished? Yes; it will never gain headway there.
2259. The tick appears to plant itself where there is plenty of vegetation and scrub? Yes.
2260. *Mr. Wilks.*] Do you hold the opinion that diseased meat goes much into consumption? It has been here.
2261. Have you had any negotiations with the adjoining colonies on that matter? No.
2262. Have you ever paid a visit the Abattoirs at Glebe Island? Yes. There was good inspection when I was there the last time—that was in 1891.
2263. You found the inspection there all that is required? Yes, I did. The visit in 1891 was an unofficial visit.
2264. They were unprepared for your visit? Quite so.
2265. With your knowledge of stock, you consider that the most rigid thing we should have is inspection? Yes. I think you have really good inspection under Mr. Stanley.
2266. What is your opinion of Glebe Island as a site for abattoirs to supply the City of Sydney? I think that Glebe Island is a good site.
2267. I should like to know whether you consider that droving cattle from the sale-yards at Homebush to Glebe Island is detrimental to the meat supply? Decidedly. They are killed when in a fevered state, and meat is never good while in that condition.
2268. You discovered that the cattle were slaughtered when in a fevered state? Yes; they are bound to be in such a state.
2269. And to avoid this would necessitate the abattoirs being in close proximity to the sale-yards? Yes; or connected with them by rail. But even then you would have to re-truck the cattle, and that would knock them about.
2270. You think that the re-trucking of cattle from the sale-yards would be detrimental? Yes.
2271. Then the only alternative would be to remove the Abattoirs to a place near to the sale-yards? I think that would be the best. It would be rather expensive for butchers to go out there to get their meat.
2272. Would you give me your opinion with regard to outside abattoirs? I have none myself, but I saw Mr. Gilruth, the Government Engineer of New Zealand, and he told me that in Glasgow the abattoirs had been put up in the centre of the city, and there is no smell from them.
2273. And they deal with all the bi-products there? Yes.
2274. *Mr. Law.*] Have you any knowledge in regard to machinery used in connection with abattoirs? No.
2275. You do not know anything about the cost of machinery? No.
2276. You have no idea what it would cost to fit up a plant to carry on the work at Glebe Island? No; I have not.
2277. *Mr. Wilks.*] In the matter of slaughtering, do you know of any system that is an improvement on pithing? No; that is universally adopted here.

WEDNESDAY, 21 OCTOBER, 1896.

Present:—

MR. BAVISTER,  
MR. O'SULLIVAN,MR. LAW,  
MR. WILKS.

J. S. HAWTHORNE, ESQ., IN THE CHAIR.

John Ashburton Thompson, called in, sworn, and examined:—

2278. *Chairman.*] What is your official position? Chief Medical Officer of the Government, and President of the Board of Health.

2279. How long have you been in your present position? Two months as President of the Board of Health.

2280. How long in your position as Health Officer? Ten years.

2281. I suppose that you have had frequent opportunities of visiting the Government Abattoirs at Glebe Island? Many of them.

2282. What is your general opinion of Glebe Island as a site for the Abattoirs? I think the site is inconvenient, in its irregularity; too small, in not affording sufficient acreage; and an unsuitable place as regards the access to it of cattle. As to the buildings upon it, I reported upon them four years ago, and I then pointed out, first of all, that they were too small, the business to be done having increased since they were first erected, and that there was not room to extend them; secondly, that they were dilapidated, and so much so that to put them in order would practically amount to reconstruction.

2283. Then your opinion is that the Abattoirs would be better if erected somewhere else—in closer proximity to the present sale-yards? I think it is necessary to erect new Abattoirs, that they should not any longer be placed on Glebe Island, and that a site which I have, by direction of the Treasurer, inspected, adjoining the sale-yards, is a very good one.

2284. May I ask you what site that is—as we have had several communications sent to us, not only by the Premier, but also by people engaged in the trafficking of land? It is known as the Wentworth Estate.

2285. The ground called the Wentworth Estate is, I think, on the opposite side of the Parramatta Road, as regards the present sale-yards? Yes. It is bounded by the Parramatta Road on the south; by Powell's Creek on the east; by Haslem's Creek, I believe, on the west; and by the Parramatta River on the north.

2286. Have you visited any other estates in close proximity to the Wentworth Estate? No.

2287. Supposing the Abattoirs were erected on the site you have just named—the Wentworth Estate—do you think the could be conducted in such a cleanly manner as to make them acceptable to the people living round about there? I think there is absolutely no doubt about that. It is a sheer matter of regulation; of arrangement; of proper business management. The only thing that would be necessary there, or that would be extremely desirable, because I do not think that it is absolutely necessary, would be to effect a junction with the sewers. That would not be a very expensive work, in my opinion. I think that a 15-inch glazed pipe, laid down to the nearest intercepting sewer at Strathfield would be quite sufficient.

2288. Supposing your ideas were carried out, and that any offensive liquid coming from the Abattoirs was conveyed by 15-inch glazed pipes to the nearest sewer, do you think that that would prevent objectionable smells, and also entirely prevent the pollution of the Parramatta River, by the Abattoirs? Yes; I think it would prevent the pollution of the river entirely.

2289. Do you think it would be possible, with modern appliances, to conduct a large abattoir on the site which has been named by you, without their proving offensive or objectionable to the inhabitants of Strathfield and Homebush? Yes; I am entirely of that opinion.

2290. Supposing that the present abattoir site at Glebe Island could be enlarged by the cutting down of the Island, on the opposite side of the road as regards the spot upon which the present abattoir stands, do you think that it would be possible to conduct well-appointed abattoirs there? I think it would be very difficult. One must remember that the Abattoirs as they stand are not big enough for the work that is done. If you destroyed those buildings, and erected other buildings, and if you enlarged your available building site by cutting down the Island, you would want a great deal more room. You would have to occupy for your buildings very much more space than is now occupied.

2291. Your principal objection, I think, to the Abattoirs remaining in their present position is the difficulty in getting cattle from the sale-yards to the Abattoirs? That is one point.

2292. Is that the strongest point to your mind against the continuance of the Abattoirs in their present position? There is an entire want of accommodation for cattle when they get there. They are there for thirty-six hours sometimes. Even at present they are very much crowded, and as time goes on there will be a still larger number going there.

2293. So you think that under any circumstances, if the Abattoirs were retained in their present position, cattle would of necessity have to be kept there in tolerably large numbers for a considerable period before being killed? Yes.

2294. Supposing that Abattoirs were erected on the Wentworth Estate, would not the same difficulty apply to ocean-borne cattle, in regard to getting them from the steamers to the abattoirs, as now applies to those going by rail to the sale-yards at Homebush? Well, they could go by water all the way. That is one of the advantages of that site. There is deep water there.

2295. How would the steamers manage to get under the railway bridge at Ryde? I imagine that they would transship the cattle, and punt them up.

2296. From the steamers? Yes. I do not see why they should not. But supposing they did not do that, but had to bring them from the steamers by road—in the first place, that would apply to only a small proportion of the cattle, and, in the second place, they have now to go by road, or do go by road, to Glebe Island. It seems to be about as broad as it is long.

2297. You are generally of opinion that the Abattoirs, as at present present situated, are not at all suitable for the requirements of the present day, nor are they likely to be suitable for the demand in years to come? I am strongly of that opinion. I think they will become more unsuitable as time goes on.

2298. Have you inspected abattoirs in any of the other Colonies? No.

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2299. Have you inspected abattoirs in any other part of the world? Yes; very often. I have seen them in various places.

2300. What abattoirs have you principally inspected previous to coming here? Abattoirs in London, Paris, Leeds, Hull, and many other places. For many years past, whenever I have been near an abattoir, I have visited it.

2301. In connection with the abattoirs to which you allude, are there any improvements that could well be introduced at the Glebe Island Abattoirs, or any new abattoirs that might be erected, which improvements would add both to the quality of the meat and the comfort of those engaged in the killing of the animals? I cannot speak of any particular detail. The erection of a good abattoir depends mainly on two things—one is the convenient arrangement of it, and the other is the materials that are used. Outside of that, I do not know that there is any particular appliance that is specially of use in abattoirs.

2302. Talking of the materials that are used, are those that are in use at the present time at the Glebe Island Abattoirs altogether unsuitable to a modern style of architecture for well-appointed abattoirs? We have a desiccating and manure-making plant, and we have disused that since the 1st July last, just because it was obsolete.

2303. So you are really doing no desiccating work at the Island? None.

2304. What becomes of all the offensive matter taken from the animals that are killed? It is taken three times a week to sea, 7 miles outside the Heads.

2305. Did you ever, in the course of your experience, find that the refuse or offal, when desiccated, proved to be a marketable and profitable commodity? Yes, it is so; and it is made at a great many slaughtering and freezing works up country, and as far as I know it is successfully sold. We did for a long time sell small quantities, and the price we put upon it was £5 per ton, which was the market value, but it cost us £7 a ton to make it with the old and obsolete plant, and therefore we gave up the business.

2306. Would it not have been better to have recommended the Government to purchase a new desiccating plant, and to have converted all the offensive matter into manure, rather than adopt your present system of taking that out three times a week to sea and depositing it outside the Heads? That is a point I would rather you put to the business members of the Abattoirs Committee of the Board of Health. They thought not.

2307. The Board of Health, I suppose, is divided into sections? It is, for that purpose.

2308. And the Abattoirs are under a kind of sectional committee? Yes.

2309. Of whom does it consist? The Under Secretary for Finance and Trade (Mr. Kirkpatrick), Mr. E. W. Knox, and Dr. Manning.

2310. Those gentlemen have the exclusive management of all matters affecting the Abattoirs? All the business management.

2311. Does a discussion ever take place at meetings of the Board of Health in reference to the Abattoir matters? Yes; they are a sub-committee.

2312. As regards the improvement of the desiccating machinery or improvements at the Island, this sectional committee would, as a matter of course, bring such a subject before the Board of Health as a body? Every decision comes before the Board of Health as a body.

2313. So their decisions on matters affecting the Abattoirs have no finality until dealt with by the larger committee? Quite so.

2314. Would you be surprised to know that desiccating works attached to the Melbourne abattoirs, as well as to some of the private slaughtering-places in Queensland, are conducted on such lines as to bring about a profit, and render the establishments perfectly inoffensive to the surrounding neighbourhood, as well as at the same time providing a most useful manure for the farmers and fruit-growers in the different parts where those abattoirs exist? Not at all. In my official capacity I have insisted upon certain works in this Colony providing themselves with a desiccating plant, partly in order to prevent nuisance, and they have always been willing to do it, because they know very well that the product is a marketable commodity. I think it is only a week since I decided that if certain meat works on the Clarence did not do that, they should not be licensed to slaughter, because you cannot conduct them properly, without nuisance, unless there is a desiccating plant. We do conduct the Glebe Island Abattoirs without nuisance, without a desiccating plant, because they happen to be on the water's edge, and we are able to get rid of the stuff; but if the works were situated inland, and on a river or anything of that kind, that could not be done. I should like your Committee to understand that the desiccating plant at Glebe Island has been given up, not because it is not a useful or an essential adjunct, but because the machinery is worn out, and is obsolete, and every ton of stuff made with it, worth £5 in the market, costs £7 to produce, on account of those faults, and considering the state of the whole establishment it did not seem to the committee worth while to purchase a new desiccating plant, or to re-establish it.

2315. So that, practically speaking, the committee have been reckoning on the Abattoirs being shifted from their present quarters, and that almost induced them to abstain from incurring the expense attending the erection of a new desiccating plant? Not exactly in that way. They have not been reckoning on the Abattoirs being removed, but before making any very heavy expenditure, they have been waiting until the Government should arrive at a decision as to what should be done. If the Government decided to keep the Abattoirs there, the committee, of course, would spend the money. They are quite aware that they ought to have a desiccating plant.

2316. Have you any idea what is the cost of removing the offal from the Abattoirs and conveying it out to sea? No; I would rather that you asked the sectional committee.

2317. *Mr. Law.*] You said that the business had increased since the Abattoirs were first erected, and that now there was no room to extend them? Not room enough, in my opinion.

2318. Do you know what area is at present occupied? No; I know by sight the whole area available, and I also know by sight what proportion is occupied, but I do not know the measurement.

2319. Do you know that only 8 acres are occupied, and that on the other side of the road there are 28 acres unoccupied—nearly four times the area at present used? Yes; I do know there is some such large piece.

2320. And there is an additional 12 acres of reclaimed land adjoining that, and belonging to the Government—White Bay? Yes.

2321. That is 40 acres, independent of the site that is at present utilised? I had not taken into consideration the reclamation. The other part of the Island I know, and I am not surprised to hear that it  
measures

measures as much as that, although I did not know exactly what it did measure; but it is very rough; it is not altogether useful land, on account of its steepness and roughness;—it is a little hill with very steep sides; and then there is a road running through the middle of it, which, in my opinion, is an exceedingly objectionable thing, as tending to dust, and so on.

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2322. But do you not think that there is ample room there for the erection of yards for cattle, and the carrying on of a business ten times as large as that carried on at present—that is, if the Island were levelled down? That would make about 50 acres, as far as one could reckon.

2323. In conjunction with what is there already, do you not think that would be ample? It would make about 50 acres altogether, according to your reckoning. Supposing that were 50 acres of reasonably level land, there is no doubt that there would be plenty of room for all that.

2324. You said that cattle had remained at the Abattoirs as long as thirty-six hours? That was a slip of the tongue. They were not there so long as that.

2325. What is the longest time you have known them to be there before they were killed? Less than twenty-four hours. Sometimes they come in on Saturday and Sunday, and in the winter they are not begun upon until Monday morning early. In the summer they would be begun upon at 12 o'clock on Sunday night, and they might come in twenty-four hours before.

2326. They would be that length of time at the Island? Yes.

2327. But that is very unusual? Certainly.

2328. That is the exception, and not the rule? Yes, that is the exception.

2329. You also said that you thought it was necessary to erect new abattoirs, and that they should not be placed on Glebe Island? Yes.

2330. You think that they should not be placed on Glebe Island? Yes, I do think that.

2331. But your only objection seems to be in reference to the means of access to the Abattoirs for the cattle? That is one objection. The other objection is that they are driven into the Abattoirs from their resting paddocks, and are liable to be killed while they are heated. The resting paddocks, the sale-yards, and the abattoirs ought all to be near together.

2332. Do you not think that this difficulty could be overcome by having a branch railway from Petersham, or elsewhere, on the main suburban line? That is a question which I think many others could answer better than I, but I do not see how the difficulty could be got over in that way, because you would have no resting paddocks at Glebe Island. We have lately gone very carefully into the fate of cattle transmitted by rail from the west. The last lot we followed came from Bourke. They were three days—seventy-two hours—on the journey. They were taken to resting paddocks where there was no grass. The last of them was killed on the ninth day after leaving Bourke, and some of those animals were practically starved the whole of that time. After a railway journey, and when on it, it appears to be thought necessary to starve them. They must have time to rest and recover and get a little food before they are slaughtered, and having taken the trouble to give them an opportunity of getting that rest, you do not want to discount it by driving them from their resting paddocks, 6 or 7 miles from the abattoirs. It would be much better to have the abattoirs close at hand.

2333. But supposing you were to take them to the Wentworth Estate, adjacent to the Parramatta River, they would have to be driven just the same? That is only across the road—the sale-yards are on one side of the Parramatta Road and the Wentworth Estate begins on the other side of that road. The sale-yards and the abattoirs would really be one establishment. You would have to drive the cattle only across a paddock or two.

2334. In regard to water-carriage, is there as deep a water frontage to the site at the Wentworth Estate which you have mentioned as there is at Glebe Island? I have been told that there is deep water, but I cannot compare the depth. There is deep water available for small craft.

2335. You cannot state that from your own knowledge? No.

2336. But from your own knowledge you can state that there is deep-water frontage at Glebe Island? Yes.

2337. You said that the cost of producing the manure was £7 per ton, and that you got only £5 a ton for it;—could not the difference be made up if the most modern machinery were brought into requisition at Glebe Island? Certainly.

2338. Do you not think that it is essential that there should be a central abattoir somewhere in the vicinity of the city? I do.

2339. *Mr. Wilks.*] Am I to understand that you have made a series of inspections of proposed sites, as well as the present site? Yes.

2340. And your conclusions are that the present site, owing to its irregularity, the smallness of its acreage, and the dilapidated state of its buildings, is unsuitable for the trade? Yes.

2341. And of the proposed sites you have visited, the Wentworth Estate offers the strongest inducements? I have seen another site, which was a very good one, but it was 30 miles from Sydney, and in making a report upon it I specifically guarded myself against taking its position into consideration, because I consider that the advantages or disadvantages of position could be best spoken of by people who are actually engaged in the trade, and know what is wanted so far as position for the incoming of stock goes; but looking upon that site by itself as a site for this particular purpose, I thought it was just as good as the Wentworth Estate.

2342. The strongest objection you had in connection with the present Abattoirs was the obsolete nature of the desiccating plant? Not at all.

2343. I mean your strongest objection as regards the treatment of the offal, which, I presume, you think should be treated by desiccation? Yes; which I make other people treat in that way.

2344. Are you aware that not only is the desiccating plant obsolete, but that the treatment of an inordinate quantity of water has made the process very expensive? Yes.

2345. The evaporation of the water has added to the cost of the manure? Yes.

2346. That is owing to the defective architectural construction of the Abattoirs? It is.

2347. That could be obviated only by the construction of entirely new buildings? Yes.

2348. Upon an improved plan? Yes.

2349. In the construction of abattoirs, would you recommend buildings similar to those used for the slaughtering of pigs and sheep at Flemington, near Melbourne? I have not seen them.

2350. In Melbourne the sheep and pigs are driven into elevated pens, and are killed over gratings, and the blood is conveyed by reticulation to a vat for the purpose of desiccation, and that prevents the mixing of the blood with water used for sluicing, instead of their being allowed to mix, as is the case at Glebe Island?

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Island? Of course the main part of the blood ought to be caught and carried away separately, and not allowed to mix with water used in sluicing.

2351. You would advise that to be done also in connection with the slaughtering of cattle? Undoubtedly. The main part of the blood ought to be caught, and carried away separately, by whatever means you adopt to do it. All that goes down with the water used in sluicing should be a mere smearing of blood, which you could not use for manufacturing purposes.

2352. That would minimise the cost of working the desiccating plant? Certainly.

2353. Do you consider that the inspection at the Abattoirs is sufficiently rigid? No, I do not.

2354. What system of inspection would you suggest? It is merely a question of the number of inspectors. The inspection that is done is efficiently done, but owing to the number and arrangement of the houses, and also to there being only five inspectors and one superintendent inspector, it is next door to impossible for them to be quite responsible for every carcass that is killed.

2355. Do you hold the opinion that diseased carcasses go from the Abattoirs into the market for consumption in any appreciable numbers? No; I cannot admit that.

2356. Do you admit that there is a danger of some going into consumption? There would not be any danger at all if we had ten inspectors instead of five.

2357. But, through the want of a sufficient number of inspectors, it is reasonable to believe that a certain amount of diseased meat may go into consumption? Of course, if a carcass is overlooked it is not inspected.

2358. You believe that there is a great danger of its being overlooked at the present time owing to the laxity of administration? No; that is just what I cannot admit. But, owing to the arrangement of the houses, and also owing to the very moderate staff of inspectors that we have, it is very likely that they are not able to inspect as carefully as they ought to inspect every carcass that is killed. I can explain what I mean by telling you that there are twelve beef-houses, and that in each beef-house three beeves can be knocked down and dressed in half an hour. There might, therefore, in any half-hour be thirty-six beeves knocked down and dressed and sent away from those twelve beef-houses.

2359. Through the architectural defects of the Abattoirs, and the smallness of the number of inspectors, there is a probability of diseased meat going into consumption? There is a possibility.

2360. Are you aware whether the proportion of diseased cattle in this country is becoming larger? No answer can be given to that question by anybody; we have not sufficient information.

2361. In the matter of the consumption of diseased cattle suffering from the ordinary diseases, are the objections tangible ones, or merely sentimental? Very tangible.

2362. You are acquainted with diseases in human beings which are traceable to the consumption of diseased meat? Demonstrably, it has been shown over and over again.

2363. Then, in our ordinary economics, there is nothing more useful than a rigid inspection at our abattoirs? Certainly; especially in regard to consumption.

2364. This rigid inspection can only be obtained at centrally-situated abattoirs? Undoubtedly.

2365. I take that to be one of your strongest reasons for supporting central abattoirs? Undoubtedly it would be.

2366. Then, inferentially, the probability is that with chilled meat coming from numerous slaughtering-places in the country the danger of diseased meat going into consumption would be increased? Yes. We have our inspectors all over the country, and such inspection as is possible is done at the freezing works, but, necessarily, it is even less effectual than that which is done at the Glebe Island Abattoirs. In point of fact, every large freezing works is as big as many a public abattoir, and it ought to have attached to it its own inspector, responsible to the central authorities, and not under the control of the owners of the freezing works. He should inspect as our deputy, and you will never get really efficient inspection until something of that kind is done. I know that some of the big companies do take very great care to weed out not merely diseased animals, but also animals which are not in very good condition for market. I do not think they all do that, but some of them do.

2367. Then the dangers to the general public through eating diseased meat are a long way more than visionary? Yes; consumption is not the only disease which is communicable to man by way of milk and meat, but it is perhaps the most important. It is so important that it is beginning to be a question whether a large proportion of the consumption that is met with in man in every civilised country in the world is not perhaps mainly due to the meat and the milk derived from animals which are suffering from tuberculosis. I have no doubt at all that one of the most important things which any health authority in any country can do is to strictly supervise the meat which is used for food, and also the milk which is supplied from cows. In this country, leaving the Glebe Island Abattoirs aside for one moment, the inspection of meat is imperfect, because the universal custom is to slaughter in private establishments. Of these, there are a great many in any district. So that, although we have men who are competent to act as inspectors under the Diseased Animals and Meat Act, and under the Cattle Slaughtering Act, and others who act generally as medical officers of health in some sense or other—usually at least three such people in any district—it is impossible for them to inspect more than a small number of the cattle that are slaughtered there, because the slaughter-houses are situated, perhaps, one 3 miles in the bush on one side of the town, and another 3 miles in the bush on the other side of the town, and so forth, up to the number of four, five, or six, and they all have their different days for slaughtering. They all give notice, but the inspector cannot always get to them in time. The remedy for that is precisely what we are talking of—that is, the erection of central public abattoirs to which should be attached an instructed inspector. In the Newcastle district, after talking about it for four or five years, during which I have very often discussed the matter with municipal bodies, and helped them to the best of my ability, they are now trying to establish a public abattoir. There, within a radius of a few miles—15 perhaps, or 20—there are about 100,000 people. I suggested to the Hon. the Treasurer that he should introduce an amendment of the Cattle Slaughtering Act into the Public Health Bill, whereby as soon as Newcastle or any adjoining municipalities which would combine have combined, and have established an abattoir, we should have power to prohibit meat-slaughtering anywhere within a radius of that abattoir which was found to be practically convenient. This has now been done. By confining to that central abattoir the slaughtering of the whole, or nearly the whole, of the meat consumed by those 100,000 people, a profit might be realised, and there could be attached to the abattoir an inspector, or as many inspectors as were wanted, and then the people there would have an opportunity of having a really efficient inspection.

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inspection of the meat. As regards Sydney, a very large proportion of the meat consumed in Sydney is slaughtered here, and, notwithstanding the presence of Glebe Island, it is equally necessary that central slaughter-houses should be erected. In a memorandum drawn up by the Abattoirs Committee of the Board of Health, after being at work for a couple of years, you will see it mentioned that the tendency of the trade is to revert to slaughtering in private slaughter-houses scattered about in the neighbourhood of Sydney. I believe, as a matter of fact, that that statement is correct. I travel about in the suburbs, and I know what the people themselves say, and the fact is, that they revert to those private slaughter-houses, not at all, perhaps, on account of the inspection, or for any other reason than that Glebe Island is a very inconvenient place, and does not suit them. It is not conveniently situated for them, and is not in a proper position.

2368. You do not think that they avail themselves of the private slaughter-houses in order to avoid inspection? I do not think they do so to any important extent; some of them do, but not to any important extent.

2369. Have you within your recollection the percentage of meat condemned at the Glebe Island Abattoirs per annum, or in any given time? No; the fact is, I got your notice only this morning, and I already had appointments, and I have been exceedingly busy with the Public Health Bill, and not able to prepare my evidence in any way.

2370. You can supply that information as an appendix? Yes. We have the information, but I cannot remember it off-hand; I may, however, tell you this off-hand—that the proportion of cattle condemned at the Glebe Island Abattoirs, which we must take to be something very near the proportion of actually diseased cattle met with there, is infinitely higher than the proportion condemned at places outside; and that arises partly from the difficulty I mentioned just now of private slaughter-houses being scattered about, and not accessible to the inspector, who is usually a municipal inspector, sometimes a police officer with other things to attend to, and, therefore, unable to get to the slaughter-houses always in time. That is one reason. Another reason is that these inspectors are not, in reality, educated men. One of the main advantages, from this point of view, of having public slaughter-houses where you can, is that you can then afford to pay an educated man, who knows disease when he sees it.

2371. You would have trained inspectors? Yes; veterinary inspectors.

2372. From the seriousness of some of the information which you have given in reply to previous questions, am I to understand that you consider this inquiry of the highest possible concern? I think it is decidedly one of the most important inquiries, in view of the public health, which could be held. I think that in these deliberations the immense importance of careful inspection should be constantly kept in mind.

2373. In reply to a question just now, you said that a certain time should be allowed for the resting of cattle—would you suggest any regulation fixing the length of time for the resting of animals;—we have been told by practical men that they consider forty-eight hours for resting sufficient? I was going to say that three days would be the minimum. I think they require a little longer than forty-eight hours. The cattle I mentioned just now got out of their trucks at the end of the third day from the time they started, and they had not had any water for twenty-four hours before that, and had been on the journey all the time. I do not think that forty-eight hours would have been long enough to rest those cattle.

2374. Why do practical butchers object to the feeding of cattle for some time before they are slaughtered? Because of the inconvenience that would otherwise arise from having the paunches and entrails overloaded with half-digested food.

2375. It is not that the animals would not avail themselves of the pasturage during the time of resting, but, simply as a matter of business, the butchers prefer to keep the animals without food for the reason you have mentioned? It is quite right to starve them for a little while. You do not want to kill an animal while the process of digestion is going on very actively, but forty-eight hours' rest is necessary. Nobody ever proposed to feed the cattle when they got to Glebe Island. They get there, as a rule, eight, twelve, or fewer hours before they are killed.

2376. Then, assuming that the Glebe Island site was determined upon for future use, there would be no necessity to have pasturage-paddocks there—simply resting-paddocks would be all that was requisite? But you would not have room for that at Glebe Island.

2377. Not with the reclaimed land? I do not think it is at all a suitable place for such a business. That reclaimed land is surrounded by houses, and all the people there would be annoyed by the noises at night, and I think that would be a very unsuitable place. Glebe Island one pictures to oneself by means of the buildings upon it—that is, one thinks first of the water side of the Island, away from the houses in Balmain—but directly you begin to speak of using the reclaimed land in White Bay one has to remember the ridges opposite, which are covered with houses, and you would destroy the value of that property. There would be the bellowing of yarded and driven cattle all night if you used that reclaimed land for resting-paddocks. I think there are many objections to that.

2378. Have you considered, in connection with the Abattoirs at Glebe Island, the erection of a suitable cold storage department? Yes; that is an essential adjunct.

2379. Would the Wentworth Estate provide facilities for that? It would, in my opinion, be best to have the main cold storage in connection with the cold storage that is contemplated by the Government Board for Exports. They are thinking of putting up cold storage buildings at Darling Island, and the main cold storage in connection with our meat supply should be there, but if the Abattoirs happened to be situated near the sale-yards, as soon as they were erected the Board of Health would, under an amendment of the Noxious Trades and Cattle Slaughtering Act, proclaim an extensive radius from them to be a radius within which no slaughtering should take place except at those Abattoirs, and it would be necessary to have a smaller cold storage there for the convenience of butchers who lived 7 or 8 miles away, and not in the direction of Sydney; but that would be a subsidiary, and not a very big storage. The main storage should be at Darling Island, and the meat would, or could, reach Darling Island by means of punts; but meat required by the butchers in the neighbourhood of the Abattoirs could be cooled at the cold storage there, and be fetched daily from that place by the butchers themselves.

2380. Well-appointed abattoirs could be so conducted as to be innocuous to the general public? I have no doubt at all about that, and I speak partly from experience gained in administering the Act managing the noxious trades.

2381. There is not the slightest danger to be apprehended by the public from centrally-situated abattoirs? Not the least. 2382.

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2382. *Mr. O'Sullivan.*] I understand from your evidence that while you would favour the establishment of abattoirs in crowded centres like Sydney and Newcastle, you think that a better site than Glebe Island could be chosen? Yes.

2383. I understand that you prefer the proposed site on the Wentworth Estate, at Homebush, to Glebe Island? Yes.

2384. You have admitted that the Abattoirs would not be dangerous to public health? Yes.

2385. Then where is the necessity for removing the Abattoirs from Glebe Island? I think that there is every possible objection that could be named to Glebe Island. In the first place you would have to raze to the ground all the buildings at present existing on Glebe Island. They are not capable of being used much longer, and are not in the least worth repairing—everybody is agreed about that.

2386. Supposing that new abattoirs were built on the other portion of the Island—on this side of Johnson's Bay bridge—and were fitted up with the most modern appliances for preventing nuisances, would not the Abattoirs then be perfectly safe as regards the public health? I think they might be safe at Glebe Island as regards the public health. If it is merely a question of putting up Abattoirs on Glebe Island, and if money is no object, I do not think that the public health would suffer at all.

2387. You have spoken about a good deal of slaughtering being carried on in private premises, because of the inconvenient distance of Glebe Island? Yes.

2388. Would it not be still worse if the butchers had to go out, a greater distance, to Homebush? Well, in as far as Homebush is just about where those private slaughter-houses are, I do not suppose that it would be inconvenient for those people to go there.

2389. Are not private slaughter-houses to be found all round the city? They are to be found all round city, but still that is the direction in which they mostly lie—Canterbury and Enfield and so on.

2390. *Mr. Wilks.*] There is a large growing population at North Shore? Yes. It might be considered whether there should not be another public abattoir at North Shore. I may take this opportunity of pointing out that a public abattoir is always a paying concern, and I have taken care that it shall have every advantage in this Colony by the amendment that I mentioned just now. Supposing that the North Shore Municipal Council decided to establish an abattoir at North Shore, as soon as that abattoir was established we should proclaim the whole district, and would say that there should not be any private slaughtering done within it. That abattoir would have the monopoly of the slaughtering, and the Council would know exactly what the return on the money invested in the abattoir would be, and it would be a paying concern.

2391. *Mr. O'Sullivan.*] You say that abattoirs are always worked at a profit? Yes.

2392. But, as a matter of fact, our Abattoirs at Glebe Island have resulted in a loss to the State for some time past? Certainly.

2393. Owing to the obsolete machinery and the backward condition of affairs there? Yes.

2394. Would it not be possible to so reorganise the Abattoirs at Glebe Island and fit them up in such a way as to make them a source of profit to the State, without, as you admit, any detriment to the public health; and, if that be so, where is the necessity for the removal of the Abattoirs further out, except as regards the one idea which you have mentioned, namely, that there ought to be greater accommodation for pasturage purposes? I do not think that, do whatever you might with that site, you would have in the first place all the room that would be required, due regard being had to necessary extension in the future and the much increased area you would have to cover with your new buildings, and the accommodation that you would want, not for resting paddocks, but for killing-pens and all that sort of thing. Then you would have to have a branch railway to take your cattle there, and you would also have to get rid of the sale-yards at Homebush—they would no longer be of any use. Or if you kept the sale-yards at Homebush, some one would have to provide resting paddocks near by. But you would have to transfer your cattle from the sale-yards to Glebe Island, and you would have to do that by means of a railway.

2395. But where is the necessity for transferring the sale-yards to Glebe Island when they are already in existence at Homebush and are working apparently to the satisfaction of the public? I do not want anyone to do that. What I have in mind is that the sale-yards and the abattoirs are two establishments which work together, and that they ought to be close together—they ought to be one establishment. The cattle should be taken from the sale-yards right into the abattoirs—that is what everybody wants to do.

2396. But does it not strike you that it might be wiser to keep the sale-yards separate from the abattoirs for several reasons—for example, the cattle themselves, if in sale-yards near the abattoirs, might smell the blood? I do not think they would. I do not mean that the sale-yards should be close up against the abattoirs. Speaking of Wentworth Estate merely for the sake of illustration—for I am not assuming that that is where the abattoirs would be if they were put on some site other than Glebe Island—the slaughter-houses would be  $\frac{1}{2}$  of a mile from the sale-yards. The Wentworth Estate is a large piece of land.

2397. There appears to be ample room at the present time for the sale-yards at Homebush, and more room could be obtained by taking in some of the land mentioned by you as a possible site for the abattoirs? Yes.

2398. Supposing the two establishments were still kept separate—the sale-yards at Homebush and the Abattoirs at Glebe Island—and a railway were constructed to Glebe Island, branching off at some point near Petersham, there would then be no necessity for pasturage ground at Glebe Island, because the cattle would go straight from the sale-yards to the slaughter-houses? Instead of being driven  $\frac{1}{2}$  of a mile they would ride half a dozen miles—that is all the difference.

2399. It would get rid of the dangerous nuisance of driving cattle through the streets? Yes, it would get rid of that.

2400. If that were so, the objection that you have, that there is no land for pasturage purposes at Glebe Island, would not hold good, because the pasturage land would be required near the sale-yards? Yes; that is quite true.

2401. There can be no doubt that the major portion of the supply of meat to large cities like Newcastle and Sydney in the future will come from country districts? It does not do so at present.

2402. But judging from the rapid way in which chilling and refrigerating works are being constructed, I think it is probable that the major portion, at all events, of the meat supplied to Sydney and Newcastle will come from establishments in the country districts? It may.

2403. If that should be the case, we shall not require very large abattoirs in the city, but we shall require something in the shape of a central slaughtering establishment where rigid inspection could be carried out? The inspection must be carried out where the animals are slaughtered. You cannot properly inspect carcasses of animals after the inside has been taken away—after they have been dressed.

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2404. If we are to be supplied in the future with the greater portion of our 'meat by establishments in country districts, as we seem likely to be, then all that would be required about Sydney would be a central slaughtering establishment, where rigid inspection could be carried out in regard to the stock that were slaughtered there? But if the meat is chiefly going to be slaughtered in the country, why should there be a slaughter-house in Sydney?

2405. Because I think we shall always have a proportion of the meat slaughtered in Sydney—for example, the stock that comes by coastal steamers; a large number of pigs come from coastal districts, and they would be slaughtered in Sydney, and it is possible that in future cattle will be brought from Twofold Bay as well as from the Richmond by steamer, as they have been in the past, and those cattle would be slaughtered at the central establishment, and for this purpose we should always require to maintain an abattoir? Yes.

2406. Even though the greater portion of our meat might come from the refrigerating works in the country districts? Yes; no doubt there will always be some slaughtering done in Sydney.

2407. That being so, all we have to decide upon is a site for the central abattoir? Yes.

2408. And I gather from your evidence that while you admit that abattoirs can be carried on without prejudice to the public health in a crowded population, still you think that a better site than Glebe Island for them would be on the Wentworth Estate at Homebush? Yes. Any neighbourhood where there is a larger area of land available so as to practically remove the business from the immediate neighbourhood of houses. If you have a very large area of land you can put your slaughter-houses in the middle of it, and dwelling-houses need not be near them.

2409. Do you know the area available on the Wentworth Estate? If I remember rightly, there are 1,200 acres, and 500 more than that might be acquired. The Wentworth Estate is a very large piece of land.

2410. Have you heard anything of a proposal to establish the abattoirs between Parramatta and Penrith—at Blacktown? Yes.

2411. What do you think of that position? As a site, I think it is a very good one. As to its position, that is a matter on which I would rather not express any opinion, because I think that people engaged in the trade can speak much better as to its convenience and suitability. But regarding it as a site, it is a very suitable and good one. I liked it very much.

2412. Do you know the site proposed some years ago at Kurnel, south of Botany Bay? Yes.

2413. What is your opinion of that? I do not think anything would be gained by having the abattoirs there. It is out of the way except for the suburbs immediately on the South Coast Line.

2414. At one time there were some very strong arguments advanced in favour of the abattoirs being established there? Yes, I know; but who advanced the arguments? I do not think that arguments are always based on the merits of the case.

2415. Have you heard anything of a site near Marrickville? No.

2416. Do you think that that would be in any way suitable as a site for abattoirs? There is a site which would be a very good one at Canterbury, on the Marrickville railway. I have heard about that, and I know the land more or less. That would not be a bad place, but I think Homebush is better. It is on the main line.

Thomas Harry Houghton, Esq., A.M.I.C.E., M.I.M.E., called in, sworn, and examined:—

2417. *Chairman.*] You are in business in this city? Yes; as a consulting civil engineer.

2418. Where is your office? 12, Spring-street.

2419. Have you been long in business in this city? For the last five or six years.

2420. Has your business brought you in any way into contact with abattoir construction or management? Very largely.

2421. *Mr. O'Sullivan.*] What establishments have you been connected with? I am engineer to a number of them. I am engineer to the Aberdeen Company, the Gladstone Meat Company, Queensland, and the Graziers' Meat Export Company, Duck River, Granville. I have also been the engineer to the Board of Health since they took over Glebe Island Abattoirs.

2422. You have, therefore, an intimate knowledge of the machinery in use at the Glebe Island Abattoirs? Yes.

2423. Do you consider those up to date or obsolete? Very obsolete.

2424. At the present time, is there much nuisance arising from the use of that obsolete machinery? The desiccating works are shut up. They have been shut up for the last three months.

2425. Why were they shut up? Because they did not pay under the system in vogue there.

2426. What do you mean by saying "under the system in vogue there"? Obsolete machinery requires a great deal of handling. The abattoirs are badly designed and worn out.

2427. Do you think it would be possible to design and erect on Glebe Island modern abattoirs fitted with all the latest improved machinery for desiccating and other purposes which would be able to carry on their operations without detriment to the public health? Of course it could be done, but with difficulty. At the abattoirs, I do not know how many lessees there are, but there are twenty-four main slaughter-houses, and each of the men stops and sluices down at whatever time pleases him. The result is that a man may be killing in one house, and the butchers on each side of him may be sluicing down their places, and you get a very large quantity of the water in the blood. That is expensive to remove. Whereas, at the abattoirs connected with the meat-works in the country districts, when they are killing for export, they stop killing at the same time all the way through, and begin to wash down after the blood has been removed. The result is that you can treat it profitably, but, where you have a great deal of water with the blood, it is expensive to treat.

2428. I understand from your answer that it would be possible to lay out modern abattoirs at Glebe Island and work them without detriment to the public health? I think that at present no detriment to the public health arises from Glebe Island.

2429. Even with the obsolete appliances? Even with the obsolete appliances. I have never noticed any appearances of ill-health amongst the people there. I have never suffered myself from it.

2430. Do you think that Glebe Island is a fairly good position for an establishment of that sort? No.

2431. What are your objections to the position? The distance from the cattle-yards is one objection.

2432. Supposing that that were got over by the construction of a railway from Petersham to the abattoirs? The same objection would still exist. You would have to retruck the cattle and sheep, and that is a very serious objection.

2433.

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2433. Where would you prefer to see the new abattoirs erected? I think the most suitable site is adjoining the sale-yards—if you continue the sale-yards in their present position, somewhere within a reasonable distance of that; or, if you remove the sale-yards, within a reasonable distance of the place to which you remove them. Glebe Island itself would be a splendid site for anything like that if it were not for the inconvenience of having to drive the cattle a distance from the sale-yards, and the absence of any paddocks adjoining the slaughter-houses.

2434. But the retrucking of stock need not be a very serious affair if proper appliances are provided? Cattle are frightened, and are as nervous as they can be when once taken out of the trucks. After doing a journey from, say, the Upper Hunter to Sydney, they do not care about being put back into the trucks. The best thing, when once they are out of the trucks, is not to put them in again until they are dead.

2435. How would you provide for stock coming from the coastal districts—for example, pigs and calves coming from the coastal districts? The small number coming from the coastal districts would come up by train, would they not?

2436. They come up in steamers? Well, if you had a site near the present sale-yards, you could easily barge them up there.

2437. That would cause a transshipment? Yes; it is not so awkward with pigs and calves as it is with cattle. Cattle get very much bruised.

2438. I daresay you have heard that cattle have been landed here from the Richmond River, and perhaps in the future they may be loaded here from Twofold Bay;—how would you deal with those? You have to travel them round to Glebe Island as at present arranged, and I do not think that with the few likely to come up from Twofold Bay, it would hurt landing them at some point on the Parramatta River and travelling them up. I have never looked into the matter of cattle coming by water to Sydney.

2439. Do you hold, then, that it is essential to have central abattoirs for a large population like that of Sydney? Certainly; I think it is the best thing you can have. You can have proper inspection then.

2440. Although in the future a large proportion of the meat to be consumed in the city will probably come from chilling works in the country districts? Of course that depends on whether you can convince the butchers that that is the best thing to do.

2441. But judging from the rate at which those establishments are going up and are extending, is it not probable that that will be the case? It is hard to say, because there is such a very strong vested interest in the Homebush sale-yards, on the part of the agents selling there, and I think that for many years they will maintain Homebush as cattle sale-yards.

2442. What would be the cost of fitting up new abattoirs, constructed either at Glebe Island or elsewhere, with all the modern appliances necessary to bring the establishment up to date? I have not looked into that matter at all. Holding the position of consulting engineer to the Board of Health, it would not be wise for me to answer that question without consideration.

2443. Would it be a very expensive item? Yes; the erection of new abattoirs of the capacity of those at Glebe Island would be expensive.

2444. I am talking now in regard to machinery only? The machinery is a small item compared to the main part.

2445. I am putting out of sight the cost of the buildings and the adjuncts, and I want to know whether the item of machinery would be a very expensive one? About £4,000.

2446. *Mr. Wilks.*] Your acquaintance with abattoirs is mainly as an engineer and expert? Yes, entirely.

2447. The conclusion you have drawn in reference to Glebe Island is that the desiccating plant is obsolete? It is worn out.

2448. Are you also aware that for a long time the treatment there of the offal has been made more costly by the evaporation of an inordinate amount of water—water used in sluicing? It always has been so, on account of only one drain being used to carry everything away. You cannot stop a man sluicing in one house after he has finished killing, because somebody below him is still killing.

2449. Then it is an architectural fault? The place is badly laid out, because there is so little fall in the drain—1 in 500, or something like that—and you cannot get the blood along without water.

2450. What other weaknesses have you detected there in regard to machinery? The whole place is worn out.

2451. It would practically require rebuilding? Certainly. When I reported on it before, I think I said that £10,000 or £12,000 would put it in a proper state of repair only.

2452. Supposing that in connection with the abattoirs we entertained the idea of erecting on Glebe Island cold storage works for supplying butchers and for export, how would you view the site then? Well, it is inconvenient; ships will not come up to there at present. If the meat were for export you would have to barge it to the ships.

2453. You mean on account of the depth of water there? Yes. You would have to build new wharfs there, and under present circumstances you would have to barge all your frozen meat. Besides, as the works are now, on the top of the hill, you would have to make arrangements for delivering the frozen carcasses to the barge.

2454. If this matter were put before you in your professional capacity you would not entertain the idea of building cold storage there? I think there are more suitable places in Sydney than Glebe Island for cold storage. Viewing the present surroundings, especially in regard to the water, I think you could get a better place than Glebe Island.

2455. More economically worked? Yes. For instance, Darling Island would make a far superior position for cold stores.

2456. Am I to understand that the chilling-works mainly direct their attention to export trade now? Almost entirely. A great deal of chilled meat is sold in Sydney at the Government meat-markets, but I think that that is only a small quantity compared with what is exported. I have no statistics as to how much does come down.

2457. Then it is not the retail butchers who appreciate those chilling-works, but they are chiefly established for export purposes—at least, that is the inference? I think the best guide you can have is the number of sheep sold at Homebush. I believe that about 60,000 sheep are sold at Homebush each week, and I think that not 10,000 sheep that come in frozen from the country are sold at the meat-markets. I cannot give you any definite figures, but they could easily be obtained. In connection with any abattoirs established outside Sydney, I think it would be desirable to provide cold storage, because if

you

you had to bring the meat in by train from Blacktown, or any of the places named by different people as sites for the abattoirs, you would not want to be running an odd truck a dozen times a day, but you would want to bring your meat in by one or two trains, and consequently you would want stores here where the smaller butchers could obtain their supplies.

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2458. You favour central abattoirs? Certainly.

2459. Am I to understand that by favouring central abattoirs you mean one site or a number of sites surrounding the city? I think that for a city the size we now have one site would be ample. You have only one sale-yards.

2460. You have not entertained the idea of establishing several abattoirs about the city? No; that would be very costly. I have not considered that. In London the slaughter-houses are north and south. In Melbourne there is only one public slaughtering establishment—at Flemington.

2461. You have visited Flemington? Yes. At Adelaide there is only one public slaughtering establishment.

2462. Have you visited the Adelaide Abattoir? Yes. I reported to the Board of Health about that a little while ago.

2463. What is your opinion of the Adelaide slaughter-houses? For a small town they are very satisfactory.

2464. How do they compare with the Melbourne slaughter-houses? They are much smaller. Only cattle are slaughtered there. Sheep, pigs, and calves are slaughtered at private slaughter-houses in Adelaide. No appliances at all are used at the Adelaide public abattoirs except the ordinary winches. All the blood is discharged into a drain, and goes on to a sewage farm. It has been most satisfactory. They have never had any coagulation in the sewer, although I thought that the blood might coagulate in such a way as to block the sewer.

2465. *Chairman.*] I think you have furnished a report to the Board of Health on the Glebe Island Abattoirs? Yes.

2466. I think the tendency of your report is in favour of the removal of the present abattoirs to some other locality? I do not think that I have ever reported on that point, but I am not certain. I may have done so, but I do not remember it.

2467. Your report was more particularly in regard to the machinery at Glebe Island? It was made in view of the very large annual expenditure for such a very small return in treating the blood and offal there. That was the first report which I made to the Board.

2468. So the information which you rendered to the Board quite recently had reference only to the desiccating machinery at Glebe Island? To the general drainage. It had nothing to do with the management as regards the supervision of the slaughter-houses.

2469. I think you complained that the treatment of blood and other offensive matter coming from the animals killed there was rendered very expensive on account of the large quantity of water that was allowed to mix with the blood? Yes; and the want of automatic machinery. There is too much handling in connection with the machinery.

2470. Do you think that that difficulty might be got over by the Abattoirs being placed under the control of the Government, and the carcass butchers being allowed to slaughter there, as at Melbourne, on paying so much per head for each animal killed, and the cleansing of the buildings being done by officers under the direct control of the Government? I hardly know if that would result in the production of blood-manure at a profit.

2471. Would you be surprised to know that in the other colonies we have had evidence already given to us that the offal and blood coming from the animals killed there are treated at a profit? In Melbourne I believe it is so. Mr. Mountain has told me that there it is done at a profit, but you will doubtless have noticed that in the sheep abattoirs in Melbourne the blood is caught quite free from water.

2472. Supposing at our Abattoirs an order were issued that none of the men were to cleanse the Abattoirs at all until after the whole of the blood had been captured and transmitted to the desiccating house, and if the blood, therefore, were treated in the same way as it is in Melbourne, do you think that, with our present machinery, that treatment would result in a profit to the Government? No; the present machinery is utterly worn out. I have reported to the Board of Health time after time about it. In fact, I could only just keep it going by constantly having it repaired. It is very much eaten away.

2473. The present machinery at Glebe Island is, practically speaking, useless? You can use it, but you never know what day something may give way.

2474. As an engineer of large experience, you could have no other recommendation to make to the Board of Health, who have the control of the Glebe Island Abattoirs, than to do away with all the desiccating work? Yes; or spend a lot of money upon repairs.

2475. Do you not think that it would be more economical for the Government to spend £1,000 or £1,200 in the erection of new desiccating works rather than resort to the present system of carrying all offensive matter outside the Heads three or four times a week by means of a steamer? Not with the present system of drainage.

2476. So you think the Abattoirs would have to be entirely rearranged or rebuilt before you could hope to make any profit, even though improved desiccating machinery were introduced in connection with the working of the Abattoirs? Yes. I could save money in the case of manure manufactured by improved machinery, but you could never make a satisfactory job of it. Speaking from memory, I think that my estimate of the cost of new drainage for the present Abattoirs was £3,000.

2477. So you are generally of opinion that instead of spending a large sum of money in improving the desiccating machinery, as well as in improving the drainage, it would be better for the Government to erect new abattoirs on some other site, in closer proximity to the present sale-yards? That is so. At the present Abattoirs the stones are all crumbling away, and the woodwork is all eaten away, and we are constantly spending money in patching it up.

2478. So, in the ordinary course of events, the present Abattoirs would have to be dispensed with, and new buildings erected, either in Glebe Island or some other locality? That is so.

2479. Do you think it would be possible to erect new abattoirs on the Wentworth Estate, adjoining the sale-yards at Homebush, without their proving offensive or objectionable to the large number of people living at Strathfield and Homebush, and in the surrounding districts? I think so. You would not carry on any noxious trades there. Of course, there is always a certain amount of effluvia where you have a large number of sheep or cattle; you could not avoid that; but otherwise I think you could carry on the abattoirs without giving any offence. I do not know the size of the Wentworth Estate, but I think it is a couple of thousand acres, and, if so, you could put the abattoirs far enough away from any residences.

- T. H. Houghton.  
21 Oct., 1896.
2480. Do you think that abattoirs could be conducted on that particular site without in any way injuring the Parramatta River? Yes. You have the main sewer within about a mile of that site.
2481. You think it would be possible, with the aid of pipes connecting the abattoirs with the main sewer terminating close by, to convey all objectionable and offensive liquid from the abattoirs into that sewer, and thus prevent any offensive smell? With plenty of water we could do that, and we have any quantity of water in the Parramatta River.
2482. Have you looked at any other site that struck you as being a suitable one upon which to erect abattoirs? No; I have never been instructed by the Board of Health to investigate any site. I looked at the Wentworth Estate, not for the Board of Health, but for other meat-works, and I approved of it for that purpose.
2483. Supposing that you had a house at Strathfield or close to the Homebush railway station, would you look upon the establishment of abattoirs on the Wentworth Estate, right opposite the present sale-yards, and just on the other side of the Parramatta Road, as being likely to injure the value of your property? It is altogether a matter of sentiment.
2484. You think it would be only a matter of sentiment? Entirely a matter of sentiment.
2485. Regarding property situated at Strathfield and Homebush to-day, would you consider that it would be as valuable six months hence if abattoirs were erected in the meantime on the Wentworth Estate, and were carried on there with the most modern appliances? As a matter of fact, the property would be just as valuable, but you cannot say how far sentiment would enter into the matter, and depreciate the value.
2486. So you think that so far as objectionable smell or objectionable sight, or anything of that sort is concerned, no property need depreciate in value except from a sentimental standpoint? That is so. I know that at some of the country works with which I am connected, you could not tell, within a quarter of a mile of them, from any smell, that you were near them.
2487. Do you think that in designing new slaughter-houses on the proposed site you would follow something like the lines followed in designing the Aberdeen meat-works? Something like them. It all depends on the site and the quantity of buildings.
2488. Did you inspect the machinery at the Flemington slaughter-houses? Yes.
2489. What was your opinion about the desiccating machinery erected by the Corporation of Melbourne at their abattoirs? Very efficient, but very costly.
2490. Does not the efficiency and the costliness of the machinery add materially to the profit they are supposed to be making? No; I do not think the costliness of the machinery does. I think we get more nitrogen in the manure in the machines which desiccate more quickly.
2491. You think that machinery could be erected much more cheaply than that which exists now at the Flemington Abattoirs, and produce quite as satisfactory results? I think more so. The machine at Aberdeen gives more nitrogen in percentage than the machines at Flemington do. I designed the one at Aberdeen, and put it up there.
2492. I think it is proposed to substitute new machinery at Aberdeen of a more modern style even than you have erected there? That is not for desiccation, it is for freezing.
2493. You do not think you could make any great improvement on the desiccating plant at Aberdeen? Yes; I could. It has been up two years, and I think I could improve it now; in fact, there is a machine which is being built for one of the companies by Hudson Bros., which is, I think, an improvement on the one at Aberdeen.
2494. Is it the intention of the Board of Health, if the present Abattoirs were allowed to remain at Glebe Island much longer, to continue taking the blood and offal out to sea? It must be done, or they must face a large expenditure, which the Government will not allow.
2495. At what would you estimate the cost of suitable desiccating machinery to be erected at Glebe Island? I think it would cost a couple of thousand pounds.
2496. *Mr. O'Sullivan.*] That is in the old establishment;—when you spoke of £4,000, you meant for the new establishment? Yes; £2,000 would be sufficient to do as much as you could do with the present establishment.
2497. *Mr. Wilks.*] Would your estimate of £4,000 cover drainage? No.
2498. *Chairman.*] You say you have visited the Adelaide Abattoirs? Yes.

THURSDAY, 22 OCTOBER, 1896.

Present:—

MR. LAW, | MR. O'SULLIVAN,  
MR. WILKS.

J. S. HAWTHORNE, ESQ., IN THE CHAIR.

Francis Kirkpatrick, Esq., called in, sworn, and examined:—

- F. Kirkpatrick, Esq.  
22 Oct., 1896.
2499. *Chairman.*] You are Under Secretary for Finance and Trade? Yes.
2500. I believe you are also a member of the sub-committee of the Board of Health having specially to do with the Abattoirs? Yes.
2501. Have you taken any practical interest in the work, by attendance at meetings of the sub-committee or by visiting the Abattoirs? I could not possibly attend the meetings of the sub-committee, because I could not get away from my business at the Treasury. I have been to the Abattoirs once or twice, but I have not sufficient expert knowledge to enter fully into the matter of the management.
2502. So your practical knowledge of the working of the Abattoirs is confined principally to returns furnished? Yes; I may say altogether.
2503. You have really had no practical experience in connection with the working of the Abattoirs? None whatever.
2504. Your colleagues on the sub-committee would probably be better informed on matters of detail in connection with the working of the Abattoirs? Much better, because they attended all the meetings.
2505. I suppose you would know whether the Abattoirs have been working at a profit or at a loss for some time past? Yes. The desiccating works have been worked at a very considerable loss—£3,000, I believe, in 1895. That was the cause of the change of the system. 2506.

2506. I suppose you are informed, by reports from some of your officers, that the principal cause of this great loss was the old-fashioned machinery used in connection with the desiccating works? That is stated to be partly the cause.

2507. Is it within your knowledge that the abattoirs at Flemington, near Melbourne, are worked at a profit, and that the manure turned out by the desiccating works more than compensates for any labour expended in making it, whilst at the same time that gets rid of all objectionable matter coming from the animals that are killed at the Abattoirs? I have heard so, but I do not know it of my own knowledge.

2508. You have numerous complaints, I suppose, from time to time about the proposed removal of the Abattoirs? There are a great number of papers bearing on the question of the removal or the retention at Glebe Island of the Abattoirs—some in favour of the removal, and some contending that the Abattoirs should remain where they are. The majority are in favour of the removal.

2509. The general consensus of opinion seems to be in favour of the removal of the Abattoirs from their present position? Undoubtedly.

2510. You have papers bearing on the question of the Abattoir's management generally? Yes, I have the Treasury inspectors' reports and other papers.

2511. These you are prepared to furnish to the Committee? Yes, at once.

2512. So that they may attach them as appendices to their report? Yes. I shall have great pleasure in furnishing all the information I can.

2513. *Mr. Wilks.*] Although you are nominally a member of the sub-committee of the Board of Health dealing with the Abattoirs, through press of other business, you practically have no knowledge of the Abattoirs? None whatever, except from the papers.

2514. And any evidence which we could obtain from you would, in your opinion, be of very little importance? That is so.

2515. Do you remember the large amount of correspondence that passed in regard to the Abattoirs at the time Mr. McMillan was Treasurer? Correspondence has been going on for years.

2516. But there was some outlined scheme in reference to the Abattoirs at that time? Yes, there was.

2517. I suppose you have no recollection at all of the outlined scheme? No.

2518. But it included either the removal of the Abattoirs or their retention at Glebe Island? I would not be sure.

2519. You have those papers in your possession? If I have I will have great pleasure in forwarding them to the Committee.

2520. *Mr. Law.*] You stated that there were a certain number of people in favour of the retention of the Abattoirs at Glebe Island and others in favour of their removal, and that the majority were in favour of their removal? Undoubtedly—that is, the majority of papers we have received. I could not say as to majority of people, because Balmain is a large place.

2521. You mean just the communications received by the department? Yes, so far as I remember.

2522. But not representing large bodies of people? I could not tell.

Edmund Compton Batt, called in, sworn, and examined:—

2523. *Chairman.*] You are a member of the firm of Batt, Rodd, and Purves? I am.

2524. Have you had any experience in connection with the abattoir movement or cattle-killing? A good deal.

2525. Where did you gain your experience? The first two years of my life in Australia at Ramornie Meat-works. I had the entire management of those works.

2526. Where are they situated? At Clarence River.

2527. Had you any previous experience in connection with the management of similar works? None whatever.

2528. That was your first experience of management in connection with cattle-killing? On anything like a large scale it was.

2529. Had you previously had any other experience, small or large, in connection with abattoirs? No; practically speaking, that was my first experience of the matter.

2530. Since you undertook the management of the Ramornie Meat-works, have you had any experience, by visiting or otherwise, of the management of abattoirs either in this or in the adjoining colonies, or in the United Kingdom or in America? In the management, no; but I have always taken a great interest in the question, and at times I have, for my own satisfaction, visited our Abattoirs, and, in the same way, the sale-yards. Twelve or fourteen years ago I drew up a scheme under which, if it had been adopted, the sale-yards would not have been where they are now.

2531. What was your idea in regard to the position that the sale-yards ought to occupy? At that time I may fairly say the question about the change of the abattoirs site was never mooted; it was simply when the old Homebush yards were worn out. I had land at Liberty Plains surveyed, and I consulted with Sir Henry Parkes, and brought before him a scheme to take 1,000 acres of land on the loop between Rookwood and where it meets the Southern line towards Liberty Plains, and I offered him 1,000 acres of land at £25 an acre, and within a few months the land at Homebush was bought for about £250 an acre.

2532. In your letter to Sir Henry Parkes did you state why you thought the land at Liberty Plains was the most suitable for the erection of abattoirs? It is a good many years ago; but I am inclined to think that I had a personal interview with Sir Henry Parkes, and that I took the plan myself to his office, and that what took place between us was entirely conversational.

2533. Did you at that time contemplate the early removal of the abattoirs from Glebe Island? No. That was simply in connection with the sale-yards only.

2534. Had you then an idea that the cattle sold at the proposed sale-yards at Liberty Plains should be driven from there to Glebe Island? No. At that time the question of the removal of the abattoirs from Glebe Island was not ripe. I always saw from the first that driving the cattle from the Homebush sale-yards to Glebe Island was an awful mistake, because during my two years' experience at the Ramornie Meat-works, we were killing, perhaps, eighty head a day, and I knew how much the meat was affected if the cattle were killed after being driven a distance like that. For five years I was living at Ashfield, and Mr. Rodd and I drove to and from Sydney every day, and I saw not only injury to the cattle, but also the danger;

F. Kirkpatrick,  
Esq.

22 Oct., 1896.

E. C. Batt

22 Oct., 1896.

- E. C. Batt. danger to the public from from the cattle driving. I think I wrote some letters about it; but it is so many years ago that it has passed out of my memory.
- 22 Oct., 1896. 2535. As a business man, do you consider that it is advisable to have the sale-yards, as at present, so far away from the slaughter-houses? No. I think that it is entirely behind the times. To my mind there is only one proper course, and that is that, wherever the sale-yards are situated, the area of land available should be sufficiently large to have the abattoirs there also; a site near by being set apart for all cognate trades closely related to the abattoirs. I would not make this a site for all noxious trades, but I would have it for all other cognate trades. I would not only do away with the cattle-driving nuisance by having the sale-yards and the abattoirs close together; but, at a convenient distance away from the abattoirs, I would have works where hides, bones, blood, and other bi-products could be treated.
2536. Judging from what you have just stated, I should say that you are of opinion that if the sale-yards cannot possibly be put closer to the present abattoirs at Glebe Island, then the abattoirs ought to be brought closer to the sale-yards? Yes.
2537. Do you know the Wentworth Estate at Homebush? I do.
2538. The old Homebush racecourse? Yes.
2539. Do you think that that would be a suitable site for the abattoirs, seeing that it is only separated from the present sale-yards by the Parramatta Road? I do not. My reasons for saying that I do not are two. One is that the site is not large enough to embrace my ideas. It might do for a year or two, but this is a big question, and should be settled for the next 100 years or so.
2540. But supposing the area could be considerably increased by the purchase of land adjoining the Wentworth Estate, do you then think that that would be a suitable site for abattoirs? I think it might be a suitable site, but not the most suitable. The reason is that it is too near the present population area. I think you would have all the boroughs, such as Homebush, Strathfield, and Concord up in arms about it.
2541. But supposing you learnt, as we have done in taking evidence, that abattoirs could be conducted there quite as extensively as, or even more extensively than is the case at Glebe Island, without causing the slightest offence in the way of smells, do you think then that that would be likely to injure the value of property surrounding the Wentworth Estate? I must ask you before I answer that question to give me the area of land you propose to have.
2542. Well, supposing we could get the Wentworth Estate, which consists of 250 or 300 acres, and also an additional 1,000 acres adjoining it? If you mean that 1,250 acres would be the aggregate area, I do not think that that would be sufficient, and I will give the reasons why I do not think so. That site adjoins municipalities, but I think that wherever the sale-yards and the abattoirs are established, you should be able to get at a reasonable figure resting paddocks. There is one paddock at Wentworth which Hill, Clark, & Co. have—a cattle paddock—but that is only big enough for one large stock and station agent. One of the great advantages of whatever place was selected should be that in the vicinity there was land which could be rented at a reasonably cheap rate for resting-places for cattle and sheep.
2543. I take it from your statement that you consider the present sale-yards, as well as the suggested site at the Wentworth Estate, is far too valuable for that purpose? I do.
2544. You think it would be better to go a little further away, and secure land of a larger area at a much cheaper rate than could possibly be the case in regard to the land in question? I should say that that would be so, provided that the price of the Wentworth land is assessed at something like what I imagine it might be.
2545. Have you in your mind's eye any site that, as a business man of large experience, you would be able to suggest as a more suitable site for the successful carrying on, not only of sale-yards, but also of abattoirs? I have.
2546. May I ask you to name it to the Committee? Certainly. I have brought a little sketch to show you. I have been at this thing some months. My business as a land-seller was to try and find out the most suitable site. I may premise by saying that I do not own an acre of land at the place in question, nor have I anything to do with it, except that I am acting as agent for the land.
2547. Are you prepared to put in this sketch of the proposed site to accompany your evidence? Yes. [See Appendix C 1.]
2548. What is the area of this land at Blacktown, which you have suggested as a suitable site? About 3,250 acres.
2549. And at what price do you think, roughly stating, it would be possible for the Government to purchase this land? I think, under £12 an acre; but I cannot say exactly. There is no blood money or high rate asked for the land.
2550. You think that, taking it all round, the whole of the area you have just mentioned could be got on an average for £12 an acre? Yes, or less.
2551. Is the land low lying or elevated? The highest land between this and the Blue Mountains on the western line. Of course it is undulating.
2552. And a portion of this land would abut on to the main western line? The whole of one boundary has a frontage to the main western line—about  $1\frac{1}{2}$  or 2 miles.
2553. And your suggestion is that a short loop-line might be constructed to run right into the abattoirs? Yes, connecting Doonside and Blacktown. That would be, practically speaking,  $1\frac{1}{2}$  to 2 miles of railway—of course, only a loop connecting the two stations. [See Appendix, C. 2.]
2554. What would be your idea in having this  $1\frac{1}{2}$  of railway constructed? I take it the cattle ought to be landed the same as they are at the present Homebush yards. If they are brought by train for immediate sale, it is of no use knocking them about with various changes. If they come straight from the trucks to the sale-yards, and if when they are taken from the sale-yards they are not to be killed at once, they must be driven somewhere, and there are thousands of acres of land available near this land—just outside the boundary—and people would be glad to sell or lease it.
2555. You think that the people surrounding the proposed site would have no objection to the establishment of abattoirs there? We have their consent in writing.
2556. As a land auctioneer, and an agent of large experience, do you think it would be likely to affect the value of land at Strathfield and Homebush if the abattoirs were erected on the Wentworth Estate, as has been suggested? Yes, to a large extent, as the prejudice would still remain however properly they were conducted. The Strathfield Council has, both in its meetings and by letters, opposed the scheme, and would, I think, still oppose it.

2557. You know pretty well the district of Strathfield and Homebush—although in one municipality I name them both, because they are distinct portions of the one borough—do you think that the land there, and the buildings upon it, would be looked upon as being more valuable now than they would be after the erection of abattoirs on a site so close to them as the Wentworth Estate? I certainly think that the erection of abattoirs on the Wentworth Estate would create a great fall in the value of the better class of house property in that borough. E. C. Batt.  
22 Oct., 1896.
2558. You think it would have a tendency to cause people to look for other suburbs to reside in rather than go there, as is the case now, and that that would reduce it from being one of the most favourite of suburbs to being one to be avoided by people who could secure homesteads elsewhere? Yes; but I think that applies more particularly to the better class of houses for residences only.
2559. I meant to apply it to people in well-to-do circumstances, who would occupy a class of houses such as are at Strathfield at the present time? They would object to it, and it would lessen the value of the property.
2560. Do you think that, notwithstanding all the precautions taken in the desiccation, there would still be a certain amount of smell arising from the abattoirs on the Wentworth Estate which would necessarily prove offensive and objectionable to people living within half a mile or three-quarters of a mile of it? I do; especially when the wind blew from that particular direction, and if they could not always smell something offensive they would fancy they did.
2561. You think there is a good deal of sentimentality about it, perhaps more than actual injury arising from the smell? I think there is a great deal of sentiment attached to it.
2562. Would the use, for abattoirs and sale-yards purposes, of the land which you have suggested as a suitable site at Blacktown, in any way interfere with the catchment area of our present water supply? No; we are on the other side of the fall.
2563. So it does not come within the catchment area? Not at all. I may add that one great advantage of having the sale-yards and abattoirs on the land in question would be that an ample supply of water for them could be obtained without any trouble, it being simply a question of laying on water from the Prospect Dam.
2564. The proposed site is so close to the Prospect water supply that a large supply of fresh water could be secured at a very little cost? Yes; I think as cheaply as you could get it from a river.
2565. This land, I presume, is not a very great distance from the present Riverstone works? As the crow flies, I think it would be about 8 miles.
2566. The general run of the people in that locality would rather hail with delight the advent of abattoirs there than take exception to their establishment there? I think so, for this reason: The people there live on their land, and they would hail the carrying out of this project, as it would not only afford them a market for their fruit, but would also supply them with cheap manure. There are hundreds of acres further back, of which I have sold some as low as from £5 to £6 an acre.
2567. You think that the establishment of abattoirs there, instead of being looked upon as a nuisance, would be regarded as doing a great amount of good, especially in the providing of manure, which would be within easy reach of the farmers and settlers round about there, and would tend to enrich what is at the present time somewhat barren land? No; I cannot admit that it is barren land. It is not barren land; it is an orchard district.
2568. As a matter of fact, is it not looked upon as being unsuitable for any agricultural purpose except fruit-growing? Yes; it is used for fruit-growing. It is not rich agricultural land, but it is good strong land, and will bear favourable comparison with most of the county of Cumberland soil.
2569. The land about there is looked upon generally as being unfit for ordinary agriculture? It is fit for fruit-growing; it is not rich land.
2570. So that the presence of an establishment manufacturing manure would probably be a great boon to the people round about there in supplying them with a rich manure at probably a small price? Of course, they would save the carriage, which is a material item. They get their manure from Riverstone, and even as far as from Dubbo now.
2571. As regards the plans you have put in, I presume you propose to send copies to the clerk, so that they may be attached to our report? I will do so with pleasure.
2572. The rough plan you have shown us, as well as this sketch? Yes. My only object is that if you think this is the best site you should take it.
2573. Your object in appearing as a witness is not to give evidence from a business standpoint, but rather as a citizen, desirous of rendering service to the country in connection with the proposed establishment of new abattoirs? I took it up entirely in that light in the first instance.
2574. It is not a new matter with you;—you discussed this matter with Sir Henry Parkes some years ago? About fifteen years ago, I think. I paid for the whole survey of a site at Liberty Plains out of my own pocket.
2575. So you have really in the past been at considerable expense in the preparation of plans, and in suggesting a method for the creation of sale-yards and the erection of abattoirs? I think I have taken more pains in the matter than, perhaps, anybody else.
2576. You can scarcely call to your mind any other citizen who has taken a more lively interest in the matter which this Committee has been appointed to inquire into than yourself? Unknown to me there may have been others.
2577. Has it ever struck you that in establishing abattoirs on the site at Blacktown which you have suggested, the retail butchers of the city would have to go a long distance to purchase their supplies unless a central market were established, and the meat were brought in in refrigerating chambers in the summer? I am quite with you; that is part of my plan; that is why I want a loop line, so that the carcasses might go off the baulks directly into the cars, and be carried to a central meat market, which would give the small and the large men the same chance.
2578. Your idea is that we should have some great central meat market, to which the meat from the Government abattoirs at Blacktown should be sent, so that the retail butchers would have all the facilities of buying and selecting their meat in the freest possible manner? Where they could go and get half a side or a quarter as they do at the present time. It would be unreasonable to expect them to go out all the way to Blacktown.
2579. Has it ever struck you that a large number of ocean-borne cattle arrive here continually, and it would

E. C. Butt. would be necessary to have a killing establishment somewhere within reasonable distance of the water frontage of the harbour? One cannot know everything. I have not gone sufficiently into that question to know the proportion of cattle that are ocean-borne, but I think it is comparatively very small. I do not suppose it would be 5 per cent. of the total number. When preparing myself on this question I wrote to Mr. M'Lachlan, the Secretary for Railways, because I wished to have reliable data, and very courteously he gave me the following information:—

Sir,

Office of the Railway Commissioners, Sydney, 14 August, 1896.

Referring to your letter of the 7th instant, asking to be informed of the number of cattle and sheep carried by rail to the Flemington Sale-yards during the year 1895, I am directed to inform you that the following are the numbers of live stock received by rail at Flemington.

	From—		
	Southern Line.	Western Line.	Northern Line.
Horses .....	2,494	1,596	2,462
Cattle.....	30,892	34,817	41,499
Calves .....	355	164	74
Sheep.....	1,417,327	1,057,469	549,651
Pigs .....	287	299	194
Total.....	1,451,355	1,094,345	593,380

I have, &c.,

H. McLACHLAN,

Secretary.

E. C. Butt, Esq., 88, Pitt-street, Sydney.

2580. *Mr. O'Sullivan.*] That makes no allowance for cattle and other animals that come in by steamers? No; that is by rail only.

2581. I understand that you are opposed to the continuance of the Abattoirs at Glebe Island? I am.

2582. For what reasons—I should like you to reiterate them? I take two objections. In the first place I think that the present Abattoirs are absolutely out of date, and very much too small for the trade that is being done there. My other objection is on account of the Abattoirs being separated from the sale-yards by such a long distance. I think that one of the crying evils for the last twelve or fifteen years has been the driving of cattle through the suburbs to the Abattoirs. It is a cruelty to the cattle, and an abominable nuisance to the people who live in the various suburbs between the sale-yards and the Abattoirs. I think there is also very great danger to the health of the citizens of Sydney from the way in which cattle are killed in a heated condition.

2583. But supposing that the objection about driving the cattle through the streets could be got rid of by the construction of a line of railway to Glebe Island from a point near Petersham, and by the cattle being brought from the sale-yards along the present line to Petersham, and thence being conveyed right into the Abattoirs at Glebe Island? That would minimise the evil, but would not do away with it.

2584. We have it in evidence that abattoirs in the centre of the city need not be dangerous to public health—that by using proper appliances, and taking sufficient care, there need not be any nuisance whatever—I am speaking more particularly in regard to the injurious effects of abattoirs on the public health? I have said plainly that I think a great deal of that is sentiment. If abattoirs are properly conducted, I do not think that they should necessarily be a very offensive place. But when experts give evidence on that point they seem to forget one thing. I have noticed the omission in more than one instance. They seem to forget that if the bi-products are not utilised in the neighbourhood where the abattoirs themselves are, and if you have to remove them through the city or suburbs it may well be taken as an objection that that is not desirable.

2585. But cannot even those bi-products be treated in such a way as to render them inoffensive? I have no doubt they could be. But it should be remembered that in some cases you would destroy their value for any after use. No doubt if they were treated sufficiently with disinfectants and lime they might be so conveyed innocuously through any borough, but I do not think that they are ever treated in that way.

2586. But most of the bi-products would be saleable, and very likely be exported to coastal districts, or taken away to the other colonies? But they are not, so far as I know.

2587. Well, they could be? Of course, I am simply putting it in the way it is. I have seen them carted away. We know where they go.

2588. As a matter of fact, these bi-products are being exported from the meat works at Bourke to New Zealand and the other colonies at a profit? That is possible.

2589. If it can be done from Bourke, it could be done from Sydney? It is a question of trade. Anybody who goes to Glebe Island now can see them being removed in carts.

2590. That is with the present method of treatment? Yes.

2591. But with the latest machinery, and a proper application of it, even those troubles could be got rid of? It would never smell like roses, however much it were desiccated or otherwise treated.

2592. If these works were established, as you suggest, near Blacktown, the butchers of Sydney would find it very inconvenient in having to go such a long distance for their meat, and I suppose you would require a central depôt at the railway terminus, where the butchers could obtain their meat? I think that would be almost a necessity, and I also think that thereby you would get better meat in Sydney. You have doubtless seen the butcher's carts coming from Glebe Island. There is just one dirty rag covered with blood stuck over the cart, and you know what the Glebe Road is on a dry, dusty day—something awful.

2593. But having the abattoirs such a long distance from the city as Blacktown would lead to a good deal of private slaughtering, such as goes on at the present to some extent? I may be wrong, but I think it would have the effect of doing away with, at any rate, some of the outside establishments, and I take it that if you are going to make it a sort of national thing, part of the scheme, which the Board of Health would have a voice in, would be proper supervision for the protection of the public. For the benefit of the grower, there must be a central market somewhere near Sydney. I do not believe in the plan, advocated by some people, of having cattle-killing centres all over the country. If you multiply your centres you must multiply your inspectors. In such places as Orange, Bathurst, and Newcastle, you might have a central market, and on a small scale the same kind of thing might obtain there, but I think you would find, if that idea were carried out, that the effect would be the doing away with private slaughter-houses. You could not help shutting them up. There would be a by-law to the effect that no private slaughter-houses should be allowed to be carried on there.

2594. But Dr. Ashburton Thompson tells us that now there is a good deal of private slaughtering in boroughs? There is; but it is only carried on on sufferance. The men there keep the matter as quiet as they can; but all those places are not half looked after as they should be. E. C. Batt.  
22 Oct., 1896.
2595. Do you think that in future the meat supply of centres of population like Sydney and Newcastle will largely come from the chilling works in the country districts? There seems to be a great prejudice at the present time against chilled meat, but I think that it will be overcome in time. But if you have a metropolitan cattle market for the relief of the grower—and that is the only place where you can get any chance of competition—you must have central abattoirs at the same place, and I think that the better they are conducted, and the better the quality of the meat that comes from there, so gradually will you do away with the chilled meat trade to a great extent, because people do not like chilled meat if they can get fresh.
2596. Is it not a fact that at the present time the meat trade is largely in the hands of a limited number of men in Sydney? Undoubtedly.
2597. A very close monopoly? A pretty close monopoly.
2598. And the public have to pay rather dearly for their meat? I think they have to pay more than they ought to pay. My evidence tends that way. A large meat market, instead of creating monopoly, gives the smaller men a better chance.
2599. *Mr. Wilks.*] I understand that you consider that the present site of the abattoirs inadequate? Totally inadequate for the trade.
2600. I also understand that, in your opinion, in connection with a properly-appointed abattoirs, the area should be so large as to provide (1) for sale-yards and (2) for the carrying on of cognate trades? I do think so.
2601. I also understand from your evidence that you think that the best site is Doonside, near Blacktown? Yes; the estate between Blacktown and Doonside.
2602. You stated that Dr. Ashburton Thompson has visited that site? He has.
2603. Are you aware of his opinion about it? I have not seen his opinion.
2604. Are you aware that he has visited other sites? He told me so himself; but, he being a Government official, though I was in the train with him, I never pressed him for an opinion upon it. All he said to me was that he saw no difficulty in regard to the drainage question.
2605. The Wentworth Estate, you consider, is not large enough? I do not think it is big enough. That is one objection I have to it.
2606. In answer to Mr. O'Sullivan you said that you think the prejudice against chilled meat will be broken down in a short time? It is possibly one of those things that will outgrow itself. I may say that at Newcastle the people are continually complaining of the want of supervision and the dangers of diseased meat.
2607. There would be a large central abattoirs? Yes.
2608. You would require an acreage of about how much? The larger you make it the better, because I am looking to the future. At Blacktown you will be outside the objections you would be bound to have in most cases from the municipalities. We have no municipality there. If you leave the question unsettled for many years, you will have to go further afield. The population at Blacktown is not likely to increase very rapidly, because all the land is used for orchard and grazing purposes.
2609. Owing to the difficulty of supervision, you recognise the fact that it is not desirable to have other abattoirs erected around the city? I am one of those who believe in the fairness of not killing a man who has spent money in developing any industry, as he had a right to do under the existing law, and therefore, if I were a legislator, I would not do anything to compulsorily make a man close his works—at all events, I would give him a certain time. In the end, you would, I think, have powers under the Act to confine the slaughtering to licensed places.
2610. You favour the principle of centralisation in regard to abattoirs? I do. I may say that the land at Blacktown is bounded by roads, and there is no objection by the people to the establishment of abattoirs there. The western line would deliver stock directly into the yards. The northern line comes round by a loop to Homebush, and, of course, the southern line comes in not many miles away at Granville. No new line of railway, with the exception of the small loop I mentioned, would have to be constructed, and the position is about as central a one as could be obtained.

## THE ABATTOIRS.

## APPENDIX.

## A 2.

[To Evidence of Mr. Alfred Allen.]

Chester-street, Camperdown, Sydney, 24 August, 1896.

I HAVE had considerable experience in sanitary matters, extending over a period of thirty years in this Colony and in Europe, of which twenty years in Australia. I was associated with sewerage matters of the city of London and many large provincial towns and cities, besides large establishments—hospitals, galls, work-houses, factories, &c. I have been employed on various occasions in the city of Sydney, under the municipal authorities, filling at various times the position of surveyor for condemned buildings. Reported upon the condition of the Chinese quarters throughout the city of Sydney; making plans and reports upon the condition of all the dairies within the city boundary. I was also engaged with Mr. Richard Seymour, the then City Inspector of Nuisances, to report for a Royal Commission upon noxious trades within a radius of 10 miles from the Sydney Town Hall. This brought me directly in contact with slaughter-houses, both public and private, and other industries bearing upon and affecting the question at issue—boiling-down, salting of hides, tripe dressing and cleansing, bone-mills and other like establishments which actually derive their origin and support from the utilisation of matter derived from such an establishment as proposed. We carefully inquired into their sanitary condition, suitability of locality, buildings, drainage, ventilation, machinery—how worked, with what effect; making plans and sketches where necessary. Most of the slaughter-houses were isolated, but very primitive in construction and appliances, and, so far as I remember, extremely deficient in system of drainage, ventilation, cleanliness. These are the most essential requirements in conducting this class of business, and, if not carefully observed, would prove most detrimental to the public health, which should certainly require most careful consideration and cannot be guarded with too much caution, and efficient, and even strenuous, means and measures of supervision, and through such control enforce severe measures for the strict observance of the law. For of necessity such places must be in a constant state of damp, if even fairly drained, so that there exists a certain amount of evaporation, some of which necessarily adheres to the meat, and then, of course, the cleaner so much the safer, for germs of disease will float in the atmosphere from an unclean surface. Another matter, only second in importance to my preceding statement, is as to the handling of the meat—the less the better. Coolness, in summer, by through currents of air. Thorough system in ventilation—especially top ventilation, to take off all rising vapours and noxious gases. Use of material that will not absorb and retain for future germination offensive substances, even from the atmosphere. In order to arrive at somewhere near perfection in laying down so gigantic a scheme as public abattoirs, the proper bunching and grouping of the various blocks of buildings is of vast importance; it facilitates the general working; concentrates within a limited space a system of drainage and ventilation; eases the supervision; therefore, the most careful inquiry and thought should be brought to bear upon every point. I have not the slightest doubt, and am even convinced from actual experience, that the Government have a combination of talent in their various departments of works, equal in every way with any emergency, and could find sufficient data to produce something near perfection, or, at least, to meet the requirements; but, even with such advantages, information in reference to these and other matters should be obtained from the various other sources open for fair consideration. I mean the study of modern establishments of this class—the various scientific and mechanical adaptations to meet emergencies and general requirements, the expense of construction, general arrangement, cost and ease of working, disposal and utilisation of offal, sewerage, and other matter. Much of this information could be obtained from other cities. Plans must be in existence, and I have no doubt that every facility would be graciously afforded to assist the concentration and perfecting a plan, wherever the site may be. The defects could be seen and avoided, and the improvements adopted or modified so far as locality will allow. I maintain that, by following some such course, invaluable information would be obtained at a very nominal cost, which cannot be overrated, and I have not the slightest doubt would save thousands of pounds, preserve public health, and materially assist in producing all that could be desired. I am of opinion, which is held out by many eminent men, that there should be no waste. If proper precautions be taken, and judicious care and appliances be brought into requisition, every particle of an animal can be turned to use, and in the process of conversion all vapours, gases, smoke, smells, &c., can be destroyed. Wherever an abattoir be erected, a population must of necessity follow. Glebe Island is somewhat isolated, and must retain advantages in that respect, for, from its close proximity to Sydney, the working population scatters itself throughout Balmain, Pyrmont, Ultimo, and the city. It would be very satisfactory to have accurate statistics of epidemic disease and death in the immediate surrounding neighbourhood, and what effect the working of the abattoirs would have in their production, and a comparison with other districts.

The present slaughter-houses and necessary appurtenances are much too scattered, and certainly behind the age, having been added to from time to time—no doubt meeting the requirements for the time being, but yet scattering and deviating from system in this manner, it is impossible to conserve a proper system of drainage. Many of the additions are of wood. This would have a most disastrous effect in case of fire. The main buildings are built of local stone, and in a sad state of decay, although so recently erected as 1869. This is attributable to being built from the top cap of the quarry, geologically speaking, which is always coarse and soft—being the most recent formation, has not formed under the same pressure. The salt atmosphere, with wind, assists to disintegrate the particles of silica, rounding off all sharp edges, and in many cases eating into the face of the stone 2 or 3 inches; but now the quarries on the Island have been further worked, the stone now obtained is of a much superior quality, and could, I have not the slightest doubt, be used for many purposes, especially where not exposed, although I could not advise it for general use. Internally it would absorb much of the objectionable matter, and externally perhaps be subject to the same influences, although not to such an extent. I would, in preference, certainly advise brick as a general material, and some of the best stone where solidity is essential, and an inside lining of glazed bricks or tiles and slate where I could—in fact, very similar to those used in modern butchers' shops—or a good cement face, easily washed, soon dry, very clean, no adhesion or absorption, and looks well. All the finer external ornamentations terra-cotta. The roofs formed with iron as far as practicable, and covered with plain tiles. Flooring of cessal asphalt. This should be laid on a good concrete bed of broken stone and blue-metal. This would avoid any chances of percolation.

I found the present accommodation to consist of—first, a large tank, with a capacity of about 1,000,000 gallons. This is excavated in the solid rock, and supplies an abundance of salt-water, and could be used for another establishment of a like character. It is filled from the bay with a 6-inch service. The pumping establishment is situated near the foot of the bridge from the Pyrmont side and the Glebe side of the Island. The supply pipe runs out about 60 yards into the bay, and the pumps throw 40,000 gallons per hour. There are two pumps, and a 6-inch service throughout. The engine-shed, pump-room, and other necessary buildings are of a very temporary character. The tank itself measured about 60 yards in length by about 20 feet in width, by about 25 feet deep. It is situated upon a very elevated position, and is admirably adapted for the purpose for which it is used.

The man who works these pumps is not required to devote the whole of his time to this work, but can also attend to the pumping of hot water for scalding pigs, &c., which is delivered from the old desiccating establishment. These desiccating rooms are not in use now, and machinery lies idle. At any rate, it is quite inadequate to the work. Much of the offal was forced to be sent to sea even when in full working order. Now all is destroyed, diverting a channel of cleanliness and profit if properly applied.

The comparatively recently erected cooling block of buildings, with engine-house, is now used as slaughter-houses for sheep. This was erected at a great cost, with all modern appliances, for its intended purpose; and a very substantial building it is, and could still be used for that purpose. I speak from actual experience, having worked upon the drawings. The shaft will bear comparison with any in the Colony.

This



## B 3.

[To Evidence of John Clayton, Esq.]

## CITY OF MELBOURNE.

## BY-LAW No. 96.

A BY-LAW to make better regulations for the management of the Abattoirs of the City of Melbourne, and for the dues to be charged thereat.

By-laws Nos. 41  
and 46 repealed.

1. By virtue of section 8, of Act No. 356, of the Parliament of Victoria, intituled "An Act to amend the laws relating to Abattoirs and the Slaughtering of Cattle," it is enacted by the Council of the City of Melbourne, hereinafter called "the Council," that from and after the date of this By-law coming into operation, By-law No. 41, intituled "A By-law for the regulation of the public Abattoirs, and for fixing the rates of dues for slaughtering to be charged therein," and By-law numbered 46, intituled "A By-law to repeal By-law No. 43 of the Council of the City of Melbourne, and to prescribe a decreased scale of rates of dues for Slaughtering to be charged in the public Abattoirs of the City," which were made and passed by the Council, the former thereof on the 1st day of October, 1860, and the latter thereof on the 24th day of February, 1862, shall be and the same are hereby repealed. And in lieu of the provisions of the said by-laws, the public abattoirs erected and established by the Council, and situate in that portion of the parish of Doutta Galla, which is within and parcel of the City of Melbourne shall be regulated, managed, and made use of, subject to, and in accordance with the regulations following—that is to say.

*As to Superintendence.*

Superintendence.

2. The land of the Council held for Abattoir purposes and all buildings and structures thereon, and appurtenances thereto (and which land, buildings, structures, and appurtenances, are meant by and included in the word "establishment," where occurring in this by-law) shall be under the charge, care, management, and direction of an inspector, with such one or more assistants as the Council have appointed, or shall appoint for that purpose.

Inspector's duties.

3. Along with such other duties as the Council shall assign to the inspector, it shall be especially his duty to carry out and enforce the regulations of the Council for the management of the establishment as to cleanliness and otherwise. To examine all animals slaughtered at the establishment, and take action as prescribed by law with regard to any which he may find to be unfit for human food. To see that all animals awaiting slaughter be duly supplied with food and water, and that no ill-treatment or unnecessary treatment be inflicted upon any such animal. To take care that good order and propriety in conduct and speech be observed throughout the establishment. To keep the register of names of slaughtermen permitted to work at the establishment. To report weekly through the Town Clerk as to the condition of the establishment, the work done thereat and any breach of the regulations by any person employed or working there.

Assistant Inspector.

4. During absence of the Inspector, his duties shall devolve upon and be performed by the Assistant or other person in the service of the Council then in charge of the establishment, and such assistant or person shall for the time being have all the power, authority, and duty of the Inspector.

*As to Slaughtermen.*

Slaughtermen.

5. No person shall be permitted to commence or continue to work for any other person at the establishment as a slaughterman, unless his name shall be entered in the Register of Slaughtermen kept by the Inspector, and he shall have signed an undertaking to observe, comply with, and obey each and every of the rules of the establishment under pain (apart from any other penalty) of having his name expunged from the Register of Slaughtermen.

Responsible slaughtermen.

6. In every compartment of the abattoirs in which slaughtering shall be carried on, one of the slaughtermen shall be especially responsible for the observance of the regulations of the establishment in such compartment. If the master butcher or employer be working in the compartment, he shall be the responsible person, and if not, he must nominate and appoint one of the slaughtermen who is to be responsible, and must notify such appointment to the Inspector. Such appointment, however, shall not absolve any other slaughterman from the consequences of wilful disregard or breach of the regulations.

*As to Use and Management.*

Use and management.

7. The establishment shall be open and slaughtering shall be permitted therein on every day (Sunday excepted) from 5 o'clock in the morning until 10 o'clock at night, and at no other time, unless upon special occasions, and except upon such special conditions as may be prescribed in writing under the hand of the Town Clerk.

Use on payment of dues.

8. Every person who shall pay to the Inspector the dues for slaughtering as hereinafter fixed, shall be entitled to the use for a reasonable time of such portion of the establishment as shall be available and assigned to him for the purpose by the Inspector.

Repair of drainage.

9. Every person using the establishment, who shall do any breakage, injury, damage, or destruction thereto, shall make good the same, and if he shall have so acted wantonly or maliciously, he shall also upon conviction thereof forfeit and pay a penalty not exceeding £10.

Cattle to be reported.

10. Every person who shall bring cattle to the establishment shall inform the Inspector of the description and number thereof, and the Inspector shall enter such information in a book to be kept by him for that purpose, and shall direct and indicate the portion of the establishment in which such cattle shall be placed, and such person shall place such cattle in no other part of the establishment than that so directed and indicated, and shall himself be responsible for the safety and proper sustenance thereof. He must also give notice to the Inspector of his intention to commence slaughtering stock before he shall commence to slaughter same.

Animals not to be ill-treated.

11. No person shall ill-treat any animal, or resort to unnecessary cruelty in slaughtering any animal at the establishment.

Food and water for cattle.

12. Every person who shall bring cattle to the establishment, and keep the same there for more than one day, shall provide the same with sufficient food and water.

Compartments to be kept clean, &c.

13. Every person who shall have assigned to him for his special use any compartment of the establishment shall at all times, while he shall use such compartment, keep the same with the yards and appurtenances thereof clean and free from offence, whether by accumulation of blood, filth, or otherwise, and shall as, and whenever required by the Inspector, cleanse, scrape, limewash, or otherwise purify in such manner as shall be necessary, and as the Inspector shall direct the walls, doors, floors, or other portion of such compartment and the appurtenances thereof which he shall be so accustomed and entitled to use, and he shall in all respects comply with the regulations for the management of the establishment.

Pithing-pens to be cleansed.

14. In every compartment of the establishment, upon one or more head of large cattle, which shall have been enclosed in the pithing-pen being killed, and before any other beast is driven into such pen, the responsible slaughterman must sweep or cause to be swept cleanly all the blood from such cattle into the blood-pit constructed to receive the same, and must put or cause to be put any refuse which shall have resulted from such slaughtering into the separate bin or receptacle provided for it.

Sheep, &c., to be killed on frames.

15. In any such compartment no small cattle, that is to say, no sheep, lamb, pig, or goat, shall be slaughtered, except with a knife, and upon the frame provided for that purpose, and with a trough beneath such frame for reception of the blood of the animals slaughtered. And when such trough shall have become full, but not to overflowing, the responsible slaughterman shall call upon the labourer employed under the Inspector to empty and replace the said trough.

Compartments to be cleansed after use.

16. After completion of slaughtering, and before leaving the compartment, the responsible slaughterman shall carefully cleanse or cause to be cleansed the portion of the establishment which he shall have been at work in, and shall leave the same in a state of cleanliness and order to the satisfaction of the Inspector.

Offal must be hung up.

17. No offal which can be hung up shall be allowed to remain upon the floor of any pithing-pen or hanging-room; but all such offal, when produced, must be hung up upon the hooks provided for that purpose in the hanging-room or other portion of the compartment.

Refuse not to be removed by users of the establishment.

18. No refuse or offal, other than such as shall be capable of being without sanitary objection used as or converted into human food, shall be removed from the premises by any slaughterman or person permitted to use any portion of the premises.

Dogs excluded. Trespassers not to intrude.

19. No dog shall be brought upon or allowed to remain upon the premises.

20. No person unless registered as a slaughterman or having lawful business to transact at the establishment, shall intrude into it or remain therein.

21. Any person who in any portion of the establishment shall be drunk, or shall be guilty of profane swearing, or of foul or abusive language, or of obscenity or indecency, or who shall conduct himself riotously, or create disturbance, or who shall obstruct in the execution of his duty the inspector, his assistant, or other officer, or person appointed by the Council to conduct or aid in the good management of the establishment, or who shall neglect or refuse to comply with any lawful request of any such inspector, assistant, officer, or person made in accordance with the provisions of this by-law, or of such regulations as shall for the time being be lawfully in force at the establishment, or shall deposit any blood, offal, filth, or refuse-matter upon any portion of the establishment, or on any land or road abutting thereon, save in the pits, bins, or receptacles provided and appointed for reception of the same, shall, for every such offence, upon conviction thereof, forfeit and pay any sum not exceeding £10. Penalty for misconduct

22. The slaughtering dues which shall be demanded, received, and taken at the establishment by the inspector or other officer or person appointed for that purpose by the Council shall be as follows—that is to say:— Dues for slaughtering.

	s.	d.
For every ox, cow, bull, heifer, steer, or calf .....	1	0
For every sheep or lamb or goat .....	0	1
For every head of swine .....	1	0

23. For every offence against any of the provisions hereof for which no fixed penalty is hereinbefore prescribed, the offender shall, upon conviction thereof before any one or more Justices of the Peace for the said city, forfeit and pay a penalty not exceeding £10. Penalties.

Made and passed by the Council of the City of Melbourne, on the 9th day of May, 1889,—

(L.S.) B. BENJAMIN,  
Mayor.  
E. G. FITZ GIBBON,  
Town Clerk.

#### B 4.

[To Evidence of John Clayton, Esq.]

#### CITY OF MELBOURNE.

SPECIAL RULES to be strictly observed by all Slaughtermen engaged at the City Abattoirs.

THAT immediately any animal slaughtered is discovered to be diseased, the slaughtermen in charge of the pen shall immediately stop the work of dressing such animal for food, and report the fact to the inspector on duty at the abattoirs, and shall not proceed further with such dressing until authorised by the inspector.

That no carcass shall be "stripped," whether for bodying or otherwise, until the sanction therefor of the inspector on duty has been obtained.

22nd January, 1894.

JOHN CLAYTON,  
Town Clerk.

#### B 5.

[To Evidence of John Clayton, Esq.]

#### CITY OF MELBOURNE.

BY-LAW No. 75.

A By-law for regulating the Carriage of Meat through the Streets of the City.

By virtue of the Act 6 Victoria No. 7, intituled "An Act to Incorporate the Inhabitants of the Town of Melbourne," it is enacted by the Council of the City of Melbourne, that from and after the date of this by-law coming into operation, no person shall bring, or cause to be brought, into the city of Melbourne, or carry, or cause to be carried, through the streets thereof, in any cart or other vehicle, any butchers' meat or carcass of meat, unless such cart or other vehicle be so constructed as that the rays of the sun and the rain and dust are not allowed to fall on or be capable of reaching such meat or carcass of meat, and that proper sitting accommodation be provided for the driver thereof, and every person acting in contravention of this by-law shall forfeit and pay a penalty not exceeding £10. Carriage of meat through streets of the city.

Made and passed by the Council of the City of Melbourne, the 24th day of April, 1876,—

(L.S.) ALEX. KENNEDY SMITH,  
Mayor.

SAML. MASTERS,  
Acting Town Clerk.

#### B 6.

[To Evidence of John Clayton, Esq.]

#### CITY OF MELBOURNE.

BY-LAW No. 93.

A By-law to provide that the covering over Butchers' Meat in course of carriage shall be clean.

By virtue of the Act 6 Victoria No. 7, intituled "An Act to Incorporate the Inhabitants of the Town of Melbourne," it is enacted by the Council of the City of Melbourne that, from and after the date of this by-law coming into operation, any person who shall bring, or cause to be brought, or carry, or cause to be carried, through any street of the said city, in any cart or other vehicle, any butchers' meat or carcass of meat, the covering or screen for protection whereof from sun, rain, and dust shall be in a foul or uncleanly state, shall for every such offence forfeit and pay a penalty not exceeding £10.

Made and passed by the Council of the City of Melbourne, on the 11th day of March, 1889,—

(L.S.) B. BENJAMIN,  
Mayor.

E. G. FITZ GIBBON,  
Town Clerk.

#### B 7.

[To Evidence of John Clayton, Esq.]

CITY OF MELBOURNE.—DESICCATING WORKS, CITY ABATTOIRS.

The Chairman, Health Committee, 12/5/90,—  
Sir,

City Surveyor's Office, Melbourne, 10 May, 1890.

I have the honor to submit certain particulars with reference to the results attendant on the introduction of the establishment erected for the purpose of treating the blood, offal, and other refuse from the slaughter-houses at the City Abattoirs. The works referred to have now been in use for a sufficient length of time to enable some reliable data to be obtained, which I have embodied in the form of a statement accompanying this report, which shows:—

The first cost of the works;  
The annual working expenses;  
Quantity of work done; and  
Revenue received by sale of manure.

With reference to the first item, I have embraced in that the entire cost—not only of the desiccating establishment itself, but also necessary alterations to the abattoirs, and the cost of blood-trucks, paving, roadway, &c.—the whole of which is within the original estimate of £12,000, and has been paid for out of current revenue.

The high price of coal, and the large quantity of water used for condensing purposes, have been together more than double the cost for labour in the item of working expenses; but, by careful supervision, a gradual reduction in the quantity of

of coal used as compared with the manure manufactured, has been effected, which, I trust, will continue. As regards water I have already reported more than once on the ultimate economy of spending money in erecting our own pumping plant for the purpose of obtaining from the Saltwater River what water is required both for condensing and for washing-down purposes at the Abattoirs. Until this is done, the charge for Yan Yean water will remain a large item in the cost of working, although I have caused that to be considerably reduced in amount to what it was during the first months of working.

The labour-sheet has been carefully supervised, and is now kept as low as possible.

Notwithstanding the cost of working the machines (from above-named causes), it is gratifying to find that during the period of the first contract for the sale of the blood fertiliser, the receipts therefrom have actually exceeded the cost of working.

A new contract entered into on the 1st of April, 1890, and extending until the 31st March, 1891, at an advance on the former contract price of 2s. 6d. per ton, gives promise of a more substantial surplus for the coming year, especially as the business is growing to such an extent that your Committee has enabled me to prepare for the enlargement of the building and the erection of a third desiccator, which I hope to complete during the present year.

As regards the practical working of the desiccating establishment, it may be said that any impartial visitor to the works must admit the absolutely unobjectionable and inoffensive way in which the process is carried on, and the great change which its presence has effected at the Abattoirs, not only in dealing effectively with what before had been termed the offence of the place, but also in pointing the way to its being retained in its present site, which is so admirably placed, and on which there is no reason why new buildings should not be erected so designed as to render the place a model Abattoir.

In this connection I cannot refrain from reminding your Committee that plans and specifications for a portion of this much-needed work have been approved by Council, and the money voted for that purpose some ten months since. Although the work did not proceed then—the Council staying its hand out of courtesy to the Government, it is imperatively necessary that the present slaughtering accommodation be increased, more especially if the sheep-slaughtering on the bank of the Saltwater River is to be abolished, as is the expressed determination of your Committee, which, of itself, would constitute a very great and much-needed improvement. It is, indeed, desirable that the low-lying portion of the Abattoir land be raised and drained, and that new buildings on approved principles be erected in the place of the present slaughter-houses, as proposed by your Committee some time since.

At present, with every good wish to effect these changes, so as to render this otherwise admirable site an unobjectionable establishment, your Committee has been prevented from effecting these improvements, and is at the same time blamed for the present condition of the Abattoirs by the very men who are instrumental in influencing the Ministry to object to further expenditure on this site. The fact that these improvements have not been carried out has been even noted in the final report of the late Royal Sanitary Commission in such a manner as to lead those uninformed as to the facts of the matter to imagine that the city authorities were blameable in the matter.

I attach the particulars as to the desiccating plant already alluded to.

CITY OF MELBOURNE ABATTOIRS.—DESICCATING WORKS.

(1.) Capital cost, working expenses, &c.

Total expenditure on works (including sundry alterations at Abattoirs, blood-trucks, roadways, paving, &c.) :—

	£	s.	d.
Buildings.....	3,717	5	8
Machinery and connections .....	6,953	8	4
Labour in erecting, supervision, &c.....	1,100	9	7
	11,771	3	7

During March, April, and May, 1889, the machinery was at work producing blood fertiliser, which was gratuitously distributed amongst farmers and others interested, in order to make the product known; and also to enable experiments to be made as to its value. The results of some of these tests is given in the printed lists of testimonials which are supplied to parties tendering for the manure.

The working expenses during these three months amounted to £1,076 5s. 4d., or at the rate of £35s 15s. 1d. per month. For this there was no return, as explained above.

A contract was entered into, however, commencing on the 1st June, 1889, and termination on the 31st March, 1890, by which the "blood fertiliser" was sold, ready bagged, at £5 15s. per ton. During this period of ten months the total cost of working expenses amounted to £4,307 0s. 9d., whilst the proceeds from the sale of the manure realised £4,339 6s. 2d., thus showing that the establishment is capable of paying the cost of its working. The following table will show the detailed statement of expenditure and receipts for each month during the term of this contract, as also the quantity of blood fertiliser produced, and the proportion of coal used in manufacturing that quantity :—

Expenditure for ten months.

	Labour.		Coals.		Water.		Bags.		Lubricants, timber, ironmongery, and sundries.		Totals.	
	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.
1889.												
June .....	185	16 9	150	17 10	.....	22	17 4	.....	17	10 2	377	2 1
July .....	190	19 8	209	14 11	.....	36	19 5	.....	18	15 0	456	9 0
August .....	104	4 6	171	9 11	300	0 0	.....	13	0 10	588	15 3	
September .....	92	16 10	157	12 3	.....	49	2 2	.....	5	19 6	305	10 9
October .....	93	1 6	162	19 5	.....	24	16 1	.....	11	6 4	292	3 4
November .....	91	19 0	166	14 2	.....	.....	.....	.....	17	1 8	275	14 10
December.....	144	18 4	166	9 7	329	0 0	33	19 10	31	7 2	702	14 11
1890.												
January .....	119	7 4	159	5 8	191	1 0	30	15 6	7	15 6	508	5 0
February .....	99	12 7	149	5 0	.....	.....	.....	30	13 7	279	11 2	
March .....	103	18 8	178	17 5	187	3 0	30	11 2	20	4 2	520	14 5
	£1,226	15 2	£1,673	6 2	£1,007	4 0	£226	1 6	£173	13 11	£4,307	0 9

(3.) Receipts and Monthly Averages.

1889.	Quantity of Offal and Blood treated.		Tons of coal per ton Manure made.	Quantity of Manure produced.		Value.	1890.	Quantity of Offal and Blood treated.		Tons of coal per ton Manure made.	Quantity of Manure produced.		Value.		
	t.	c. q.		t. c. q.	£			s. d.	t. c. q.		t. c. q.	£		s. d.	
June .....	107	6 0	1.96	70	15 0	406	16 3	December .....	280	16 0	1.81	73	10 0	422	12 6
July .....	254	7 0	2.52	92	6 2	530	7 4	January .....	294	16 0	1.61	75	0 0	431	5 0
August .....	243	0 0	2.24	71	3 2	409	5 1	February .....	293	0 0	1.58	79	0 0	454	5 0
September .....	227	12 0	2.11	70	10 0	405	7 6	March .....	303	0 0	1.50	81	0 0	465	15 0
October .....	259	4 0	1.89	68	0 0	391	0 0	Totals ...	£2,522	13 0	.....	754	15 0	4,339	6 2
November .....	259	12 0	1.93	73	10 0	422	12 6								

*Average Monthly Work.*

Blood and offal treated .....	252½ tons.
Manure disposed of.....	75 tons 9 cwt. 2 qrs.
Quantity of coal per ton of manure manufactured .....	1·815 tons
Monthly receipts by sale of manure.....	£433 18s. 7d.
Monthly working expenses .....	£430 14s.

It will be seen from the foregoing figures that the manure sold amounts to about 30 per cent. of quantity of offal and blood put through the machines. The present working expenses I am striving to keep below £400 per month, whilst I trust the receipts (under the new contract) will be, at least, £450. The machines are in first-class order, and have worked satisfactorily from the start, notwithstanding the extremely bad foundation on which they have been built, and which has increased the original cost of the works.

I have, &c.,  
A. C. MOUNTAIN,  
City Surveyor.

## B8.

[To Evidence of John Clayton, Esq.]

CITY OF MELBOURNE.

DESICCATING WORKS, 1895.

The Chairman, Health Committee,—  
Sir,

City Surveyor's Office, Melbourne, 3 February, 1896.

I have the honor to report that during the past twelve months (ending 31st December, 1895) the machinery at above establishment has been kept in first-class order; also that—*notwithstanding* the reduction on the output as compared with some preceding years—the cost of production has been kept very low, and the receipts more than cover the working expenses. There is reason to believe that an increase of business will take place at the abattoirs during the year 1896, now that supervision has been decided on for the neighbouring slaughter-houses, in which case I trust to be able to present a still more favourable statement at the close of the present year.

During 1895 3,035 tons 12 cwt. of blood and offal were passed through the desiccators, producing 758 tons 18 cwt. of blood manure, at a cost—for working expenses—of £1,896 6s.

The receipts from sale of manure, &c., amount to £2,123 5s. 10d., showing a surplus of £226 19s. 10d.; but, in addition to this, quite 215 tons of manure were lying in stock at the close of the year. This will find ready sale directly the dry season ends, and the much-needed rain permits farming operations to be resumed. For the Committee's information, and as an illustration of the falling off of business at the abattoirs during the last two years, I may state that, whilst in 1892 no less than 1,127 tons of blood manure was produced, in 1894 this was reduced to 742 tons.

The relative figures for last year as compared with 1894 are as under:—

	For the Year—	
	1894.	1895.
Quantity of manure produced .....	tons. cwt. qr. 742 8 0	tons. cwt. qr. 758 18 0
Cost of manufacture .....	£2,069 0s. 0d.	£1,896 6s. 0d.
Cost of producing 1 ton .....	£2 16s. 0d.	£2 10s.
Fuel consumed per ton of manure .....	1·64 ton.	1·55 ton.
Receipts from sales .....	£2,524 1s. 10d.	£2,123 5s. 10d.
Receipts in excess of expenditure .....	£455 1s. 10d.	£226 19s. 10d.

It will be seen from the above figures that whilst the working expenses have been kept down, the resultant profit is not so large as it was in 1894. This, of course, is due to the smaller demand for the blood manure during 1895, in consequence of the long drought; and is explained by the fact that, whilst we had only about 80 tons of blood manure in stock at the end of 1894, we had no less than 215 tons (as previously stated) as at 31st December, 1895. This represents an additional value of about £330, which should properly be added to the £226 19s. 10d. already received in cash in excess of the working expenses.

I have, &c.,  
A. C. MOUNTAIN,  
City Surveyor.

## B9.

[To Evidence of J. H. Clayton, Esq.]

PIG SLAUGHTER-HOUSE.—CITY ABATTOIRS.

THE design of this building is to facilitate the killing, dressing, and handling of pigs in a cleanly and expeditious manner. The pigs are received (either from the carts, for which a special landing and "ramp" is provided, or from the back stock road leading from the sale-yards) into a lane, and thence driven into lairs, of which there are four large and seven small. These lairs, or pens, are snugly covered over portion of their area with a shed, and the back of same is sheltered from the weather by corrugated iron lining to the fencing. They are paved with brick set in cement grout, fitted with water and feed troughs, properly drained, and will accommodate from 500 to 600 pigs comfortably.

As the pigs are wanted for killing they are driven from their pens up an inclined plane into the crush-pen, thence they go to the killing-place, which is raised some 3 ft. 9 in. above the floor-level of the dressing-room to enable the blood to be collected by means of receiving trucks, whence it goes to the desiccators.

The killing-place is floored with slate sloping to a central grating (which is connected with a drain-pipe leading to trucks), and the walls are of asphaltum. The pigs may either be slaughtered here in the usual local manner, or they may be killed in the Chicago method, should that be preferred, as tackle has been provided for hoisting and hanging the animal when alive.

From the "place of execution" the carcass is allowed to slide into the scalding tub (where it is freed of bristles), thence into the cold-water tub, after which it is lifted on to the "runner," disembowelled, dressed, and carried along on the running bar to the hanging-room. Slate slabs are provided in the dressing-room for the "small goods." The scalding water is obtained from a vertical boiler housed in an outer shed, the steam from which heats the water in the tubs.

Such is the general arrangement for the killing and dressing of the pigs; there are four sets of killing-places, crush-pens, tubs, hanging-rails, &c., in the building, so that four butchers can be carrying on their work independently of one another at the same time. At each tub, however, four men can work, so that the facilities of the present building will permit of 500 pigs being passed through per day. The floor of the dressing-room is paved of brick set in cement, and white enamelled tiles line the brick walls for a height of 4 ft. 6 in.

The hanging-room in which the carcasses remain to cool until removal from the building is a brick apartment 60 x 30, built with hollow walls, paved with asphaltum, lined (as the dressing-room) with enamelled tiles, and covered with a concrete ceiling. The windows are double, and the doors (which are iron, and slide on rails) are packed with charcoal. Ventilation above the ceiling is provided by large louvres at each gable end of the building. A network of hanging-bars depends (by means of light iron rods) from the ceiling; these are all ingeniously connected by means of switches with the main runners from the dressing-room. About 500 pigs can be accommodated in this hanging-room. Whilst it has been kept as dark as possible, and will be isolated so far as may be from the external air, the necessary ventilation of the room has not been omitted, as six 12-inch torpedo cows have been provided through ceiling and roof.

Two lavatories for the use of the workmen form part of the design of the building, the plans of which were prepared by the City Surveyor, and the work carried out under his supervision at a cost of about £3,000.

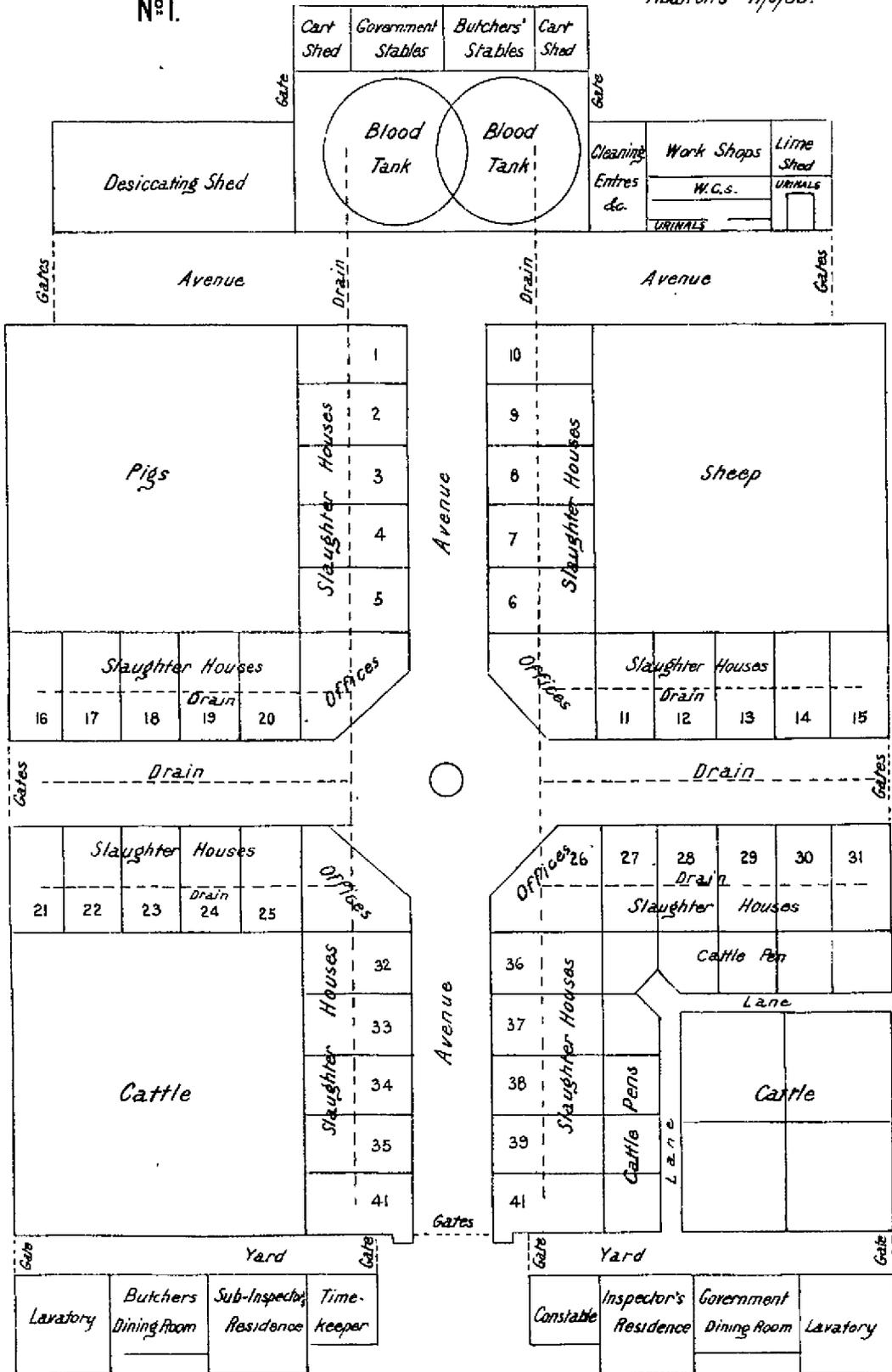
[4 Plans.]



APPENDIX A'  
[To Evidence of Mr. Alfred Allen]

SKETCH PLAN  
No. 1.

Handed in before the  
Select Committee on "The  
Abattoirs" 17/9/96.



August 1896

(sig. 362-)

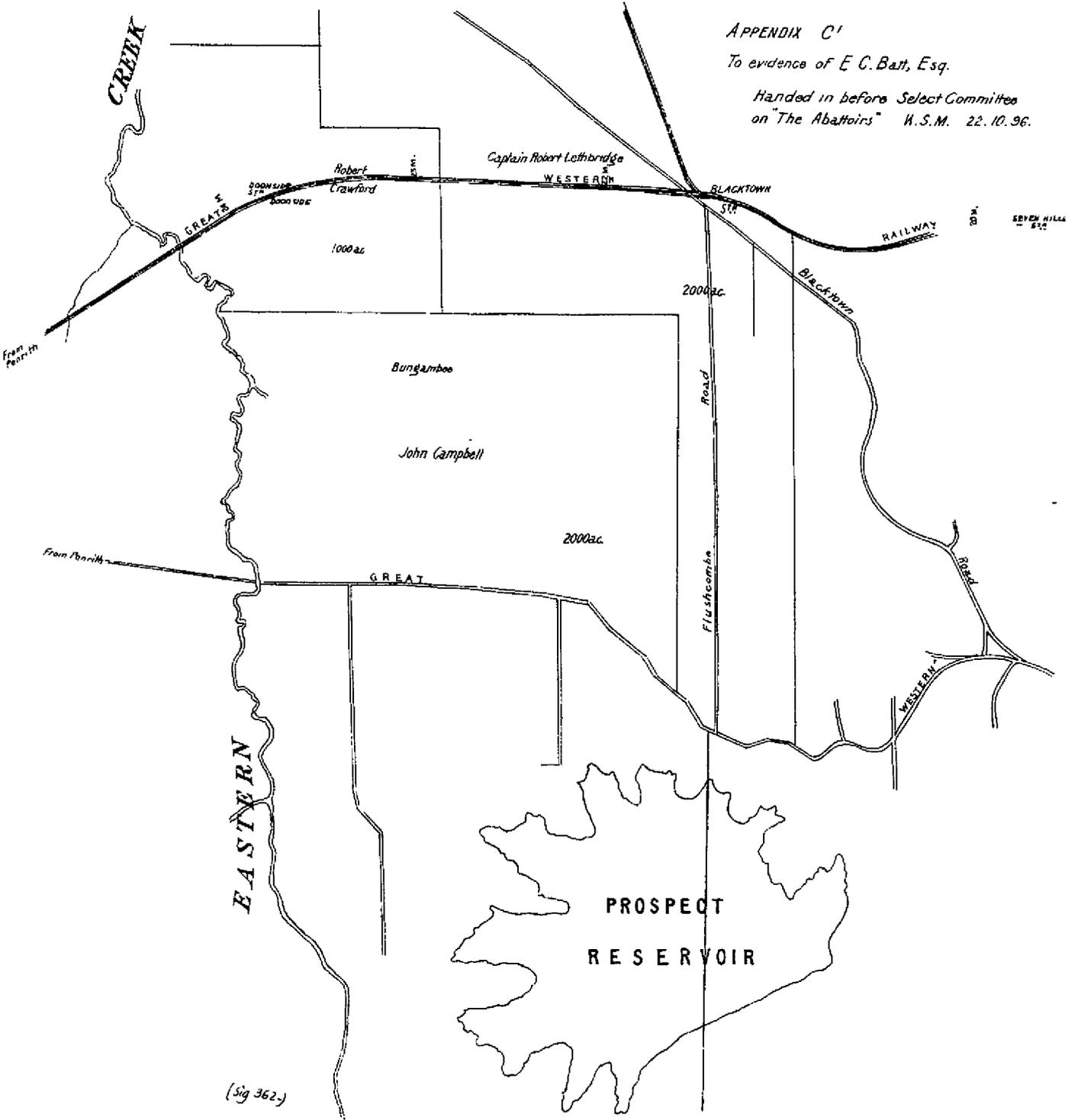
Allen



APPENDIX C'

To evidence of E. C. Batt, Esq.

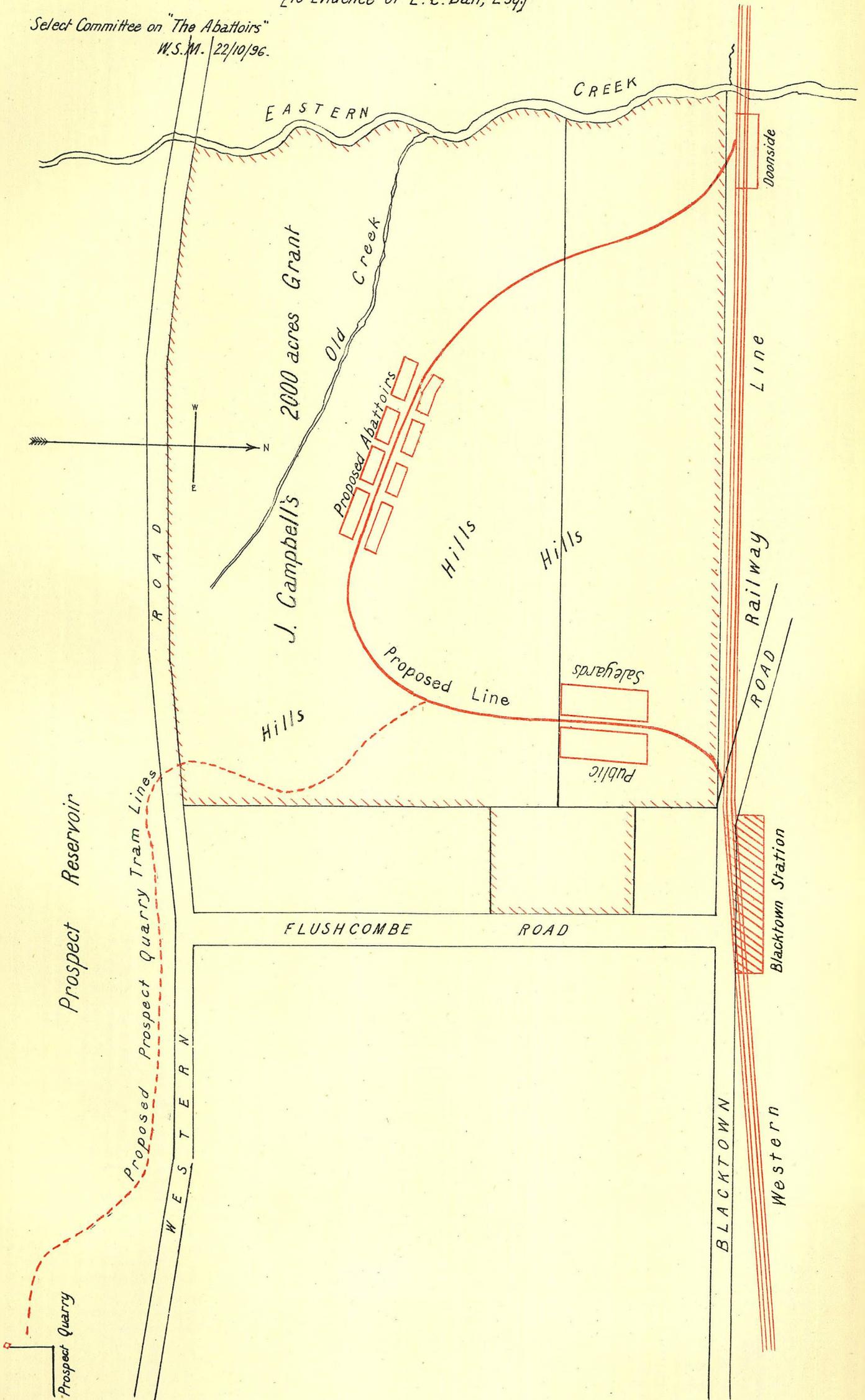
Handed in before Select Committee  
on "The Abattoirs" H.S.M. 22.10.96.



APPENDIX C 2

[To Evidence of E. C. Batt, Esq.]

Select Committee on "The Abattoirs"  
W.S.M. 22/10/96.



(Sig 362)

1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

NOXIOUS TRADES AND CATTLE SLAUGHTERING ACT, 1894.  
(REPORT ON THE WORKING OF PART I OF THE, FOR THE YEAR ENDED JUNE 30TH, 1895.)

*Printed under No. 1 Report from Printing Committee, 21 May, 1896.*

The President of the Board of Health to The Under Secretary for Finance and Trade.

Sir,

Sydney, 29 February, 1896.

I have the honour to report that, in anticipation of the Act coming into force, the Chief Medical Inspector of the Board of Health made an inspection of all the premises used in connection with the carrying on of trades in the county of Cumberland which could be found, and which might be considered either to be at the time or thereafter to become noxious—that is, offensive or injurious in some way or other, either to the workmen engaged in the trade or to the inhabitants of the neighbourhood of the place in which the trade was carried on. This preliminary inspection was not always an easy matter to accomplish, because there was at that time an impression that the Board would prove somewhat exacting in its administration, and the traders themselves were, in some cases, not altogether desirous that any change whatever should take place, fearing that it would result in a considerable outlay of money in putting their premises in a condition satisfactory to the Board, and in procuring the necessary apparatus and appliances to carry on their calling in accordance with modern methods. For the most part, the trades with which this Act has to deal are those concerned in the working up of animal substances, from which the most offensive effluvia are given off.

As is well known, the question of dealing with these noxious trades has been a prominent one in this Colony for very many years, and a plan which was generally advocated was the setting apart of some particular area of land in an out-of-the-way place, to which all these trades might be relegated, in the belief that, being so far away, they might carry out their operations without offence to any considerable population. Against this, however, many considerations were urged. For instance:—The cost of transmission of materials; the great likelihood of decomposition of animal matters, especially in summer-time and during transmission; the fact that where many factories were, settlement of population would occur; although such factories might be isolated at present, they would be the centre of a populous neighbourhood in the near future. This mode of dealing with these trades might be called that of isolation. Acting upon these considerations, and from my experience in other countries, I strongly urged the abandonment of this scheme in favour of the system of regulation, the trades being controlled so that the various processes are carried on in such manner as to prevent the escape of offensive effluvia into the atmosphere, the possibility of which is proved by the fact that these trades are, and for many years have been, carried on in the midst of populous places in many parts of the densely-populated districts of Europe without creating any nuisance. The Bill to enact this system took effect on the 1st July, 1894. It provided that it should at first apply only to the county of Cumberland, and it has not been extended to any other district of the Colony, which the Act provides may be done when necessity arises.

As the result of the preliminary inspection before referred to, the trades of fat-melter, fat-extractor, bone-boiler, bone-grinder, blood-boiler, blood-dryer, glucemaker, fellmonger, tanner, leather-dresser, and wool-scourer have been found to be the chief causes of nuisance, and those which most urgently required regulation. Since that time likewise the trade of poultry-farmer would appear to be oftentimes the source of much annoyance to neighbours. The first-mentioned trades were gazetted as noxious trades within the meaning of the Act on the 2nd August, 1894, and, at the same time, by-laws for their regulation, which had been prepared by the Board of Health, based upon the models of by-laws in force for similar objects in England, were gazetted. Proclamations, dated 26th September and 30th October, withdrew the trades of fellmonger, leather-dresser, wool-scourer, and tanner from the list of noxious trades, but subsequent experience has abundantly proved that there is an urgent necessity for at least the trade of wool-scouring being again proclaimed as a noxious trade, because of the very numerous reports which have reached the Board, showing that the rivers, particularly in some districts, have been, and are still being, grossly polluted by the operations of wool-scours.

The

The number of traders actually carrying on during the year was thirty-five, but two of these ceased, so that at the end of the year there were thirty-three actually at work. These were distributed in the following districts, viz. :—

1 Randwick (Municipal).	1 Auburn (Municipal).
2 Botany (Municipal).	1 Liverpool (Police).
5 North Botany (Municipal).	1 Liverpool (Municipal).
8 Alexandria (Municipal).	1 Windsor (Police).
1 Marrickville (Municipal).	1 Ryde (Police).
1 Enfield (Municipal).	1 Ryde (Municipal).
1 Strathfield (Municipal).	1 Rockdale (Municipal).
1 Granville (Municipal).	1 Willoughby (Municipal).
1 Rookwood (Municipal).	2 Parramatta (Police).
	2 Lane Cove (Municipal).

At the inception of the operations of the Act the Board were anxious to give every possible latitude to the traders who had been allowed for so many years to go on with their work pretty much as they liked, and who had come to think, in many cases, at all events, that their trade was necessarily a dirty one, and, therefore, might, without blame to themselves, be carried on in a dirty place and in a dirty manner. This, however, is not the case, and the Board tried, and it believes successfully, to induce the traders to take another view of things, and to see that to carry on their trades in a decent, orderly, cleanly manner would not only diminish the offence to their neighbours, but would actually be a source of profit to themselves. The Board is, therefore, pleased to report that in very many cases the traders showed a most commendable willingness to comply with the Board's regulations. Some of these, indeed, said that they would have done so of their own motion long ago, only, of course, it meant an expenditure of money, and so long as other traders were not required to and did not incur this additional expenditure, they would have been placed at a disadvantage in trade competition.

Five traders who occupied exceedingly filthy premises, where they followed the offensive method of rendering putrid butchers' wastes in open pots, were stopped altogether. One of these was compelled to erect proper apparatus on his old site. The other four elected to remove to more suitable sites and to new and well-arranged premises.

Seven traders who had been carrying on their trades in dilapidated old premises removed to well-built premises on the southern outfall line of sewer, with which their premises are now connected; and five traders also, who were either already there, or began business there during the year, were connected with the sewer.

Every one of the thirty-three premises has been altered and improved. For instance, all floors are now constructed of concrete or other impervious material, and are graded to gutters, so that it is possible now to keep the floors clean.

While giving such assistance as it reasonably can in advising the traders as to the best methods in which the Board's requirements may be met, the Board has been careful not to commit itself to particular methods or processes by which a given result may be attained, because a method which is suitable for one trader might not be so good for another, and because an apparatus which works well in the hands of one trader might not work so well in the hands of another. I am now referring chiefly to the means for disposing of offensive vapours and gases. Seven traders have adopted chambers in which the offensive fumes are destroyed, so that they no longer escape to the air. Other traders pass their vapours into tanks containing various chemical substances in solution, while others again use other means. The one point upon which the Board insists is that these vapours shall not escape into the atmosphere.

There has been no unusual difficulty in initiating the operations of the local authorities, which have usually effectually supervised the premises in their districts. It is only fair to say that in the Borough of Alexandria, which has by far the largest number of such traders, the local authority, through its Inspector of Nuisances, has performed its duties with unusual intelligence and energy.

In only one case has there been obstinate refusal to comply with the regulations, and only after every effort has been used, without success, to persuade the trader to comply with the regulations and place his premises in decent order and condition, has it been decided to institute legal proceedings to compel him to do so.\*

\*The result was the conviction of the trader.

I have, &c.,

A. STUART, M.D.,

President of the Board of Health.

1896.

—  
LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

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EIGHTH REPORT

OF THE

METROPOLITAN BOARD OF WATER SUPPLY  
AND SEWERAGE,

From 1 January, 1895, to 30 June, 1896.

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*Printed under No. 21 Report from Printing Committee, 8 October, 1896.*

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SYDNEY: WILLIAM APPELGATE GULLICK, GOVERNMENT PRINTER

1896.



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1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

METROPOLITAN BOARD OF WATER SUPPLY AND  
SEWERAGE.

(REPORT OF, FROM 1ST JANUARY, 1895, TO 30TH JUNE, 1896.)

*Printed under No. 21 Report from Printing Committee, 8 October, 1896.*

To the Honorable the Secretary for Public Works,—

Sir,

4 September, 1896.

The Board of Water Supply and Sewerage have the honor to submit to you their Eighth Report, embracing the period from 1st January, 1895, to 30th June, 1896.

Hitherto it has been customary to furnish these Reports annually, from 1st January to 31st December, but no Report was submitted for the year 1895, as it was deemed advisable to alter the year of the Board to correspond with the financial year of the Government, and instead of presenting two Reports this one has been extended so as to cover the eighteen months.

WATER.

2. The average daily consumption of water per head of estimated population supplied was 40·76 gallons, as against 34·23 gallons during the year 1894. The average daily supply was 16,645,014 gallons, and the estimated population supplied 408,282.

3. During the eighteen months 1,433 houses were connected to the Water Supply, making a total at present supplied of 85,059 houses.

4. The work of laying reticulation mains has been pushed on with expedition, the demand for extensions having increased to an enormous extent in consequence of the abnormal heat and dryness of last summer. Over 99 miles of new mains were laid and 1,853 hydrants fixed; of these latter, 157 were screw-down and 1,696 of the ball pattern. The total length of water-mains, exclusive of trunk mains, now under the control of the Board in the city and suburbs and country districts is 891·26 miles, with 1,608 screw-down hydrants and 16,904 ball hydrants.

5. During last summer advantage was taken of the lowness of water in the rivers forming the source of the supply to clear out the Nepean tunnel, and execute certain other very necessary improvements there, which have had the effect of preventing

preventing silting-up in the tunnel, and considerably increasing the volume of water capable of being drawn through the same. The utility of this work was manifested when it was required to quickly fill the storage reservoir, the level of which had fallen some 8 or 9 feet during the progress of repairs to the canal above the reservoir. The Engineer reports that he was able to augment the supply from the Cataract River, which was 40,000,000 gallons per day, by a further quantity of 70,000,000 gallons per day from the Nepean River.

Improvements have also been made at the entrance of the Cataract tunnel.

The work of relining and strengthening the banks of the canal on No. 8 section, near Kenny Hill, a portion of which was done during 1894, has been continued with very satisfactory results, a further length of 2,725 feet having been so treated, making a total length completed of 3,358 feet.

On 26th February, 1896, a slip took place in the canal bank at  $38\frac{1}{4}$  miles, while a very large quantity of water, viz., 117,000,000 gallons per day, was being sent down to the reservoir; the supply was shut off, repairs promptly effected, and water turned on again on the following day.

In the Board's Report for 1894 reference was made to the fact that, in order to release the water impounded in the Prospect Reservoir embankment and prevent any possible movement of the upper surface, several tunnels had been driven in along the base and filled with rubble, so as to form permanent drains. These have proved so eminently satisfactory that it was deemed advisable to continue the work; four more headings have therefore been driven, making eleven in all. Since the completion of this work no movement of the outer slope is perceptible.

The planting of ornamental trees has been continued at Prospect, the old Veteran Hall has been renovated and otherwise improved, and three workmen's cottages erected, so that the men may be always within call in the event of any contingency arising.

In May, 1895, the control and management of the Trout Ponds constructed by the Board, near the point of discharge of the canal into the Prospect Reservoir, for the propagation of fry intended to be liberated in the reservoir, were offered to and gladly accepted by the Department of Fisheries, together with a piece of land, in area about 6 acres, near the Outlet Tower, as a site for the construction of a fish-hatchery. Buildings and other accessories have been erected by the latter Department, and hatching operations are now in full swing. The wisdom of this step has been amply proved by the success which has been since achieved.

The fence on both sides of the canal between Prospect and the Pipe Head Basin has been made dog-proof by the addition of wire netting to the existing post and rail fence.

The work, commenced in 1894, of strengthening the slopes of the bank of the Potts' Hill Reservoir at the back of the pitching with dry rubble wall was continued by contract and completed in October, 1895, the whole of the eastern slope of the reservoir having been so dealt with.

6. Only one fracture of a trunk main is reported. This took place on the Liverpool Road, at Enfield, and was promptly repaired without any inconvenience to consumers.

7. The heavy draught on the mains during last summer demonstrated the existence of certain weak spots, and these were taken in hand and improvements ordered to be carried out. The districts particularly referred to are Pymont, Waverley, Randwick, Woollahra, Balmain, Strathfield, North Sydney, and the Illawarra suburbs. Most of the work is well advanced, and will be available before next summer, and no time will be lost in completing the remainder.

8. The Engineer in his report points out the necessity for a trunk main being laid the whole distance from Prospect to Potts' Hill reservoir. This conviction has been forced upon him as a result of the difficulties he had to contend against during last summer, when it was found that to keep up a sufficient head in the screening-tank at Potts' Hill to give the quantity required at Crown-street reduced the head between Potts' Hill and Prospect, and thus prevented the canal between these places being availed of to its fullest capacity. The cost of this work is estimated at over £100,000, and the Board have already asked that provision may be made for this sum to be voted on the next Loan Estimates.

9. Since last Report the village of Smithfield has been included within the sphere of the Board's operations. A circular concrete tank, of a capacity of 100,000 gallons, has been constructed alongside the canal about 3 miles below Prospect; thence a 4-inch supply main is laid to the township, which is reticulated with about  $3\frac{1}{2}$  miles of mains, supplying a population of 300.

10. The supply to the new districts along the railway line from Chatswood to Hornsby has also been completed, and has proved a great boon to the residents; while intending residents are daily importuning the Board to execute fresh extensions to localities lately subdivided, in order that they may lose no time in starting building operations. The reservoir for supplying these districts is situated at Wahroonga, alongside the Lane Cove Road, at a height of over 700 feet above sea-level, and consists of tanks of a capacity of 40,000 gallons, which were formerly used in connection with the North Shore supply. The water is pumped to these tanks from Chatswood through a 10-inch steel main, the distance between the two points being  $7\frac{1}{2}$  miles, and the head which the pumps have to work against is 390 feet. The engines used are those formerly employed for raising water from Woollahra reservoir to Waverley reservoir, but a new pump has been fitted suitable for the extra duty required. The 10-inch main already alluded to (which also acts as a distributing main) has been extended from the tanks to Hornsby township. From this trunk main about 9 miles of reticulation mains have been laid in various thoroughfares.

It is intended to still further improve this supply by providing duplicate pumping-plant, and erecting additional storage tanks at different levels, as the districts develop.

11. In October last the Board were appealed to by the Borough Council of Parramatta to supply the residents with water, as the supply in the local reservoir was nearly exhausted, and what remained was unfit for use. The necessary assistance was at once afforded by permitting two connections to be made—one at Harris-street, and the other at the Sydney Road—between the Parramatta Council's mains and those of the Board. The Board continued to supply the town until the beginning of July, when the connections were shut off, the local reservoir having been replenished by copious rains.

12. The system of hiring out meters to consumers at a low rental finds increased favour daily. Since last Report a contract for a three-years supply of meters was let to Messrs. Davis, Shepherd, & Co., of Melbourne, but one of the conditions of the contract was that the meters were to be manufactured within this Colony. The contractors, therefore, lost no time in beginning operations here, the result being that they were able to commence delivery before the stipulated time. The work turned out by this firm has been executed in a prompt and highly satisfactory manner.

The number of new meters fixed during the eighteen months is 1,266. Of these, 1,175 are rented from the Board. 213 were removed, the net increase for the period being 1,053.

The total number of meters now fixed to the Board's mains is 6,134, of which 1,575 are rented from the Board.

13. Every day, and more especially during the hot weather, when the storage capacity of the high-level reservoirs is taxed to its utmost extent, the necessity for the Centennial Park reservoir becomes more and more apparent. The Board note with satisfaction the work which has already been carried out in connection with the contract for excavation, but regret the delay which is now taking place in calling for tenders for the second contract, which it is understood is unavoidable on account of the necessity for certain tests being carried out; but the Board desire to respectfully impress upon the Minister the importance of the work, with the hope that the utmost expedition may be exercised in carrying it to a speedy and successful conclusion.

14. The question of the free supply of water to public hospitals, charitable institutions, &c., has for some time past been engaging the serious attention of the Board, as it was found that the consumption of water for these purposes was annually increasing to a very large extent. During the year 1894 the quantity supplied free was 40,000,000 gallons, representing a value of £2,000, but in 1895 the consumption increased to 47,000,000 gallons, valued at £2,350. The figures for 1895 represented an average consumption by persons supplied of 44·36 gallons per head per day, and as the average consumption throughout the whole of the city and suburbs for all purposes was only 34 gallons per head per day, it was apparent that considerable waste was taking place, and the Board foresaw that, unless some restriction was placed upon the consumption by the institutions concerned, the misuse of water was likely to increase and become a serious question, and one that would very materially affect the Board's revenue, as most of the water supplied was from the high-level reservoirs, and was, therefore, costly on account of the pumping required to raise it.

After mature consideration the Board decided to limit the free supply to 50 gallons per head per day for persons resident in hospitals and 30 gallons per head per day for persons resident in charitable institutions; all water consumed in excess of this quantity to be charged for by meter at the usual rate. The allowance fixed upon is considered an abundant supply for all purposes. In Melbourne the free supply to public hospitals is only 30 gallons per head per day.

It might be mentioned in passing that the Board solicitor has advised that section 63 of the Principal Act is so framed that its legal construction is, that only hospitals and charitable institutions which are supported out of municipal rates are entitled to be supplied free, on such terms and in such quantities as may be agreed upon between the Board and the Council of the city or borough in which the water is to be supplied. As no hospitals or charitable institutions in this Colony are supported

supported out of municipal rates, the provisions of the section are nugatory. In the Bill now before the Legislature provision has been made to overcome this difficulty and to supply free, on the 50 and 30 gallons per head basis.

While recognising the value of the work done by the public hospitals and charitable institutions, the Board fail to see why the ratepayers of the city and suburbs should be taxed so as to contribute to such an undue extent to the maintenance of institutions in which are housed persons from all parts of the Colony. It is therefore proposed to submit for your approval a recommendation for permission for the Board, from 1st July, 1896, to take credit annually in their revenue account for the value of all rates forgiven, and water supplied free, by statute.

The water supply to public parks has also been placed on a satisfactory footing, a charge at the usual rate being now made for all water consumed in excess of the quantity allowed free, which is calculated on an acreage basis.

In addition to the above, a considerable quantity of water is daily granted free for street-watering, washing wood-blocked roadways, and gutter-flushing where no sewers are available, of which no record is kept.

15. The cost of pumping 1,000 gallons 100 feet high at the Crown-street pumping-station, compared with former years, was as follows:—1890, ·75d.; 1891, ·70d.; 1892, ·48d.; 1893, ·32d.; 1894, ·35d.; 1895–6, ·347d.

At Ryde pumping-station the cost was only ·324d., and the Engineer reports that if the quality of the coal delivered at these stations had been as good in the earlier part of 1895 as it was later on the result would have been more favourable.

The quantity of water pumped was 48·09 per cent. of the whole supply, being 4,378 $\frac{3}{4}$  million gallons.

16. A further allotment of land, forming portion of the old Botany Water Reserve, on the east side of the Botany-road, has been leased for wool-scouring and fell-mongering purposes to Messrs. Johnson and Vicars, which makes the fourth establishment of this kind now located on the Board's property at Botany.

17. The work of properly defining the boundaries of the catchment area of the Nepean, Cordeaux, and Cataract Rivers, which was placed in the hands of Mr. Trevor Jones, has now been completed, and plans and descriptions prepared. These are now with the Department of Lands, with a view to an amended description of the boundaries being proclaimed, as at present it is found that large tracts of land are included in the proclaimed area which are really situated on the other slopes, while, on the other hand, land which forms portion of the watershed has been omitted.

18. In November last a complaint was made by the Borough Council of Richmond, which town is supplied direct from the Hawkesbury River, that the waters of the river were being fouled by the discharge of effluent from a wool-scouring establishment at Emu Plains, some 12 miles above the Richmond off-take, and the Council were naturally apprehensive as to the effect upon their water supply, seeing that the river was then very much below its usual summer level. An inspection was at once made, when it was found that there was ample cause for the Council's fears. The Board were unable to take action themselves, as this supply is not yet vested in them, and they are only managing it on behalf of the Minister, pending the passing of the Amending Bill; but representations were immediately made to the Government, and action taken, which resulted in an abatement of the nuisance and removal of any possible danger.

19. Complaints were made during last summer by the residents of Camden and farmers and other settlers along the banks of the Nepean River that the water had ceased to flow, and that in the waterholes was becoming brackish and unfit for consumption, which misfortune they attributed, to some extent, to the fact that the river and its tributaries were tapped higher up, and water drawn off for the supply of the Metropolitan districts, thus depriving them of their riparian rights. As there was undoubtedly considerable force in these contentions, the Board decided that on certain days in each week, while the drought lasted, the scour-valve at the Cataract Dam was to be opened, and the whole of the water allowed to pass down the river, instead of being diverted into the tunnel; this practice was continued for many weeks, and had the desired effect.

20. A monthly analysis of water by Mr. William M. Hamlet, Government Analyst, is attached, which shows that "it maintains the ordinary good character of the Sydney Water Supply, namely, that of a good water suitable for all drinking purposes."

#### SEWERAGE.

21. During the eighteen months 22·63 miles of sewers were laid by the Board, and 5·62 miles by the Government, and transferred to the Board, making a total of 280·20 miles of sewers now under the control of the Board. 4·60 miles of stormwater ducts, constructed by the Government, were also handed over, making a total length of 14·42 miles of stormwater drains now managed by the Board.

22. The number of houses connected to the sewers was 4,497, making a total of 44,462 houses now connected, and an estimated population served of 213,417.

23. Surveys have been completed for extending the sewerage system to the western suburbs, Annandale, eastern slopes of Waverley and Randwick, and southern portions of North Sydney; and for stormwater relief drains in the City, Paddington, and Woollahra.

24. Good progress has been made with the work of sewerage the low-lying portions of Erskineville, Alexandria, and Newtown; and the pneumatic ejectors for raising the sewage into the main outfall are being fixed, and will probably be ready for work in a few months.

25. The northern and southern main outfalls, with branches thereto, together with the whole of the reticulating sewers in the city and suburbs, have been maintained in a satisfactory condition, and are regularly flushed. Very few cases of flooding of premises in consequence of surcharging of sewers have occurred, and in these cases steps were promptly taken to prevent a recurrence.

26. The Board have been confronted with a difficulty in respect of some of the old City sewers, in consequence of the inaccuracy of the old records; the exact position of the drains was therefore unknown, and many were found to run under house property; these the Board are, in every instance, taking steps either to divert or strengthen, so as to prevent any possible damage to premises over the same by the collapse of the work.

27. Total quantity of silt removed from the sewers was 4,351 tons; of this, 2,801 tons was taken from the sewers of the old system, 1,350 tons and 200 tons respectively from the Bondi and Botany main sewers. This is an increase on former periods, and is said by the Engineer to be due to the prevailing dry weather and the extension of reticulation. The most of this silt was conveyed in the Board's punt and deposited on Government reclamation works. About 2,000 cubic yards of deposit was also taken from the various stormwater drains.

28. The following branch sewers of the old City system have been thoroughly renovated and repaired, and consequently the life of same considerably prolonged :—

Brick sewers, Elizabeth-street and Pitt-street.

The whole of these old sewers are being dealt with gradually year by year, and the cost of same provided from revenue, and as each one is completed the annual cost of maintenance is considerably lessened.

29. The total number of houses connected to the sewers by the Board under the compulsory clauses of the Act was 84, all of which are situated in the suburbs, the average cost per house being £9 10s., which is less than this work has been done for previously. The number of persons who took advantage of the Board's deferred-payment system was 136. This system is daily increasing in favour, as persons in indigent circumstances are enabled to reap the advantages of the sewerage system without suffering the disadvantage of being compelled to pay at once the full cost of the work.

30. For the protection of property-owners the Board in 1891 decided to issue certificates when sanitary plumbing and drainage jobs had been satisfactorily carried out. This has proved a great success—indeed, very few proprietors will now pay for work done unless the certificate is produced ; the number of these certificates issued during the eighteen months is 879.

31. Numerous instances, of which particulars are given in the Engineer's report, continue to come under the notice of the Board's Inspectors of serious defects in drainage work carried out prior to the inception of the Board ; but unfortunately the Board's hands are tied in cases where the owners neglect or refuse to make alterations, as, owing to an omission in the Acts, the Board have no power to recover the cost if they do the work compulsorily. However, provision to meet cases of this nature has been made in the Bill now before the Legislature.

32. The Engineer reports that very satisfactory results indeed have attended the erection of ventilating-shafts in the city and suburbs, and the work of erecting new shafts has been pushed on vigorously. Since last Report, 419 exhaust and 266 induct shafts have been fixed, as well as 8 induct and 4 exhaust water-sprays, the work extending over the city and eight boroughs or municipalities. The total length of sewers now ventilated is 182·50 miles.

#### SEWAGE FARM.

33. In the last Report it was mentioned that the Board had accepted a tender for the lease of the Farm for a period of ten years ; but this experiment proved a failure, as owing to the very unsatisfactory manner in which the Farm was being worked the Board were compelled to exercise their power of re-entry for breaches of the conditions of the lease. Possession was therefore taken in October last, since which date it has been worked by the Board, who found it necessary to expend a considerable sum of money in repairing banks and roads, and cleaning, ploughing, and harrowing the irrigation and filtration beds, which had been sorely neglected by the lessee. These beds are now working well, and the sludge is regularly and satisfactorily disposed of, and everything is being got in readiness for planting in the coming spring.

The area of the Farm has been increased by 22 acres by the construction of 11 acres of filtration tanks, and the balance has been laid out in undulating pasture-land, which it is intended to sow with English grasses. The main carrier through the Farm has also been extended to this area.

The

The average daily flow of sewage on to the Farm was 2,095,000 gallons, from a drainage area of 1,150 acres. The quantity of silt removed from the screening chambers and deposited on the Farm was 1,960 cubic yards, and the quantity of lime used for cleansing the walls, &c., of the chambers after removal of sludge was  $4\frac{1}{2}$  tons.

34. The question of forcing the sludge by compressed air through a submarine pipe on to the Farm is under consideration, and a sum of money sufficient to meet the cost has been included in the draft Loan Estimates. The completion of this work will be the means of saving a considerable sum now spent annually on the maintenance of the present bridge across Cook's River, which is an insecure and unsightly structure, as well as an obstruction to the navigation of the river.

35. The report of Mr. W. M. Hamlet, Government Analyst, on the result of an analysis of effluent water from the Farm will be found attached to the Engineer's report, from which it will be seen "that the high standard of purity hitherto reached is still maintained."

## FINANCIAL.

### WATER.

36. The following table shows the working of the Water Branch:—

Year.	Revenue.	Working Expenses.	Capital Cost.	Capital Cost, excluding item City Council's Water Fund.	Percentage of Working Expenses to Revenue.	Percentage of Working Expenses to Capital Cost.	Percentage of Revenue on Capital Cost.	Interest on Capital Cost after Paying Expenses.
	£	£	£	£				
1888	125,486	19,205*	3,004,557	2,623,837	20.40	0.97	4.78	3.81
1889	138,923	36,568	3,088,068	2,707,500	26.32	1.35	5.13	3.78
1890	145,990	34,788	3,189,080	2,808,412	23.82	1.23	5.19	3.96
1891	165,831	38,291	3,306,649	2,925,987	23.09	1.30	5.66	4.36
1892	155,886	45,078	3,394,581	3,013,919	28.91	1.49	5.17	3.68
1893	157,426	37,141	3,409,731	3,029,059	23.59	1.22	5.19	3.97
1894	161,167	39,274	3,440,614	3,059,957	24.36	1.21	5.26	4.05
1895 for six months.	85,364	19,693	4,078,979	3,698,323	23.06	1.06	4.60	3.54
1895-6	174,357	37,495	4,154,261	3,776,879	21.50	0.99	4.61	3.62

\* For nine months only.

37. Comparing the results of the year ending June, 1896, with that ending December, 1894, it will be seen that the revenue has increased to the extent of £13,190. This is principally due to the very great increase in the quantity of water consumed by meter during last summer, which was exceptionally hot and dry; the increase in the meter revenue alone was £10,510.

Although the water-rate was increased 1d. in the £ from 1st January, 1895, this did not result in any material addition to the revenue, the extra rate, allowing a discount for prompt payment, being intended merely to counter-balance the falling municipal assessments of both city and suburbs.

38. The working expenses were reduced by £1,779, which is very satisfactory, seeing that since the last Report was published nearly 100 miles of new mains have been laid, with the necessary hydrants, valves, &c., as well as additional pumping-stations and reservoirs.

39. The capital debt has been increased by the sum of £713,647, which includes the cost of the Potts' Hill Balance Reservoir, the duplicate pipe-line between Potts' Hill and Crown-street, and the North Shore Water Supply, all of which were constructed by the Government and transferred to the Board, and also the expenditure by the Board in extending the reticulation to new districts.

40. The revenue for the year 1895-6 was £174,357, and the working expenses amounted to £37,495, or 21.50 per cent. of the gross revenue, leaving a net revenue of £136,862, or a return of 3.62 per cent. upon the capital cost.

41. The towns of Campbelltown and Liverpool are supplied direct from the main canal, and are debited with the actual cost of all the local works, and charged 3d. per 1,000 gallons for the water supplied, calculated at the rate of 32 gallons per head of population per day.

42. The following are the tables worked out on this basis:—

#### CAMPBELLTOWN WATER SUPPLY.

Year.		Annual Instalment required to pay off Cost of Reticulation and Interest thereon in 100 years.	Maintenance (including proportion of Head Office expenses).	Charge for Water supplied from Canal, 32 gallons per head per day at 3d. per 1,000 gals.	Total Charges.	Revenue.
1889	Reticulation, £2,175..... } Population supplied with water, 144..... }	£ s. d. 78 13 0	£ s. d. 129 8 0	£ s. d. 21 0 6	£ s. d. 229 1 6	£ s. d. 128 18 0
1890	Reticulation, £4,353..... } Population supplied with water, 561..... }	157 8 1	222 17 0	81 18 1	462 3 2	346 16 0
1891	Reticulation, £4,433..... } Population supplied with water, 686..... }	160 5 11	234 17 0	100 3 1	495 6 0	408 15 0
1892	Reticulation, £4,433..... } Population supplied with water, 748..... }	160 5 11	222 0 6	109 10 1	491 16 6	357 1 1
1893	Reticulation, £4,454..... } Population supplied with water, 820..... }	161 1 1	168 2 9	119 14 4	448 18 2	401 14 7
1894	Reticulation, £4,457..... } Population supplied with water, 844..... }	161 3 3	171 10 4	123 4 5	455 18 0	398 8 4
1895 six months.	Reticulation, £4,457..... } Population supplied with water, 853..... }	80 11 7	79 1 8	62 5 5	221 18 8	191 7 2
1895-6	Reticulation, £4,502..... } Population supplied with water, 877..... }	162 14 4	150 2 3	128 7 10	441 4 5	383 15 0

#### LIVERPOOL WATER SUPPLY.

Year.		Annual Instalment required to pay off Cost of Reticulation and Interest thereon in 100 years.	Maintenance (including proportion of Head Office Expenses).	Charges for Water supplied from Canal, 32 gallons per head per day at 3d. per 1,000 gals.	Total Charges.	Revenue.
1891	Cost of Reticulation, £11,885..... } Population supplied with water, 1,244..... }	£ s. d. 429 15 2	£ s. d. 134 9 8	£ s. d. 181 12 5	£ s. d. 745 17 3	£ s. d. 236 18 3
1892	Reticulation, £12,773..... } Population supplied with water, 1,527..... }	461 17 5	853 6 5	223 11 0	1,538 14 10	1,004 4 4
1893	Reticulation, £12,997..... } Population supplied with water, 1,661..... }	469 19 5	312 15 0	242 10 1	1,025 4 6	956 15 3
1894	Reticulation, £13,120..... } Population supplied with water, 1,857..... }	474 8 4	332 14 3	271 2 5	1,078 5 0	947 8 0
1895 six months.	Reticulation, £13,274..... } Population supplied with water, 1,923..... }	240 0 1	157 16 1	140 7 7	538 3 9	473 14 3
1895-6	Reticulation, £13,258..... } Population supplied with water, 2,035..... }	479 2 1	365 11 5	297 18 4	1,142 11 10	983 10 10

43. The following is the table for

RICHMOND WATER SUPPLY.

(Date of Transfer to Board, 26th May, 1893.)

Year.	Capital Cost.	Interest at 4 per cent.	Maintenance (including proportion of Head Office Expenses).	Total Charges.	Revenue.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1893 .....	12,340 0 0	493 12 0	314 16 1	808 8 1	399 15 3
1894 .....	12,340 0 0	493 12 0	638 7 10	1,131 19 10	438 18 6
1895 .....	12,352 2 6	247 0 10	178 6 2	425 7 0	337 3 2
(for six months)					
1895-6 .....	12,430 7 0	499 4 3	529 10 1	1,028 14 4	547 11 11

44. The Amending Bill, which contains provisions for rating premises not connected with the mains, not yet having become law, the financial result of this scheme still continues unsatisfactory.

SEWERAGE.

45. The following table shows the working of the Sewerage Branch :—

Year.	Revenue.	Working Expenses.	Capital Cost.	Capital Cost, exclusive of items paid from Revenue.	Percentage of Working Expenses to Revenue.	Percentage of Working Expenses to Capital Cost.	Percentage of Revenue on Capital Cost.	Interest on Capital Cost after paying Expenses.
	£	£	£	£				
1890 .....	81,800	22,249	1,281,045	1,177,614	27.19	1.88	6.94	5.06
1891 .....	81,302	25,411	1,447,287	1,343,856	31.25	1.89	6.05	4.16
1892 .....	87,927	27,305	1,605,948	1,503,517	31.05	1.81	5.84	4.03
1893 .....	93,661	27,092	1,691,462	1,588,031	28.92	1.70	5.89	4.19
1894 .....	93,134	28,053	1,745,120	1,641,689	30.12	1.70	5.67	3.97
1895 .....	43,110	14,250	1,831,611	1,728,180	33.05	1.64	4.98	3.34
(six months)								
1895-6 .....	85,486	30,304	1,892,256	1,788,825	35.44	1.69	4.73	3.09

46. The revenue has decreased £7,648. This is accounted for by the reduction in the municipal assessments and the discount allowance for prompt payment.

47. The working expenses have increased £2,251, due to the extra maintenance on account of the 33 miles of new sewers and stormwater drains constructed.

48. The capital debt has been increased by £147,136, being the cost of main sewers and stormwater drains constructed by the Government and transferred to the Board, and also the reticulation sewers carried out by the Board.

49. The revenue was £85,486, and the working expenses £30,304, or 35.44 per cent. on the gross revenue, leaving a net revenue of £55,182, or a return of 3.09 per cent upon the capital cost.

## WATER AND SEWERAGE.

50. The following table shows the working of the two Branches taken together :—

Year.	Revenue.	Working Expenses.	Capital Cost.	Capital Cost, exclusive of Items on which Interest has not to be paid.	Percentage of Working Expenses to Revenue.	Percentage of Working Expenses to Capital Cost.	Percentage of Revenue on Capital Cost.	Interest on Capital Cost after paying Expenses.
	£	£	£					
1890	227,790	57,037	4,470,125	3,986,026	25·03	1·43	5·71	4·28
1891	247,133	63,702	4,783,936	4,269,843	25·77	1·49	5·78	4·29
1892	243,813	72,383	5,001,529	4,517,436	29·68	1·60	5·39	3·79
1893	251,087	64,233	5,101,183	4,617,090	25·58	1·39	5·43	4·04
1894	254,301	67,327	5,185,734	4,701,646	26·47	1·43	5·40	3·97
1895	128,474	33,943	5,910,590	5,426,503	26·42	1·24	4·72	3·48
(6 months). 1895-6	259,843	67,799	6,046,517	5,565,704	26·09	1·21	4·67	3·46

51. The capital cost of the water and sewerage schemes on 30th June, 1896, amounted to £6,046,517, but this sum includes two large items on which interest has not to be paid, viz., £377,382, value of assets taken over from the City Council in 1888, which assets were paid for from rates collected from the citizens; and £103,431, paid out of Consolidated Revenue for Sewerage Works, leaving £5,565,704 as the amount upon which interest has to be paid.

52. The total revenue was £259,842, and the working expenses of both branches £67,799, representing 26·09 per cent. of the gross revenue, leaving a net revenue of £192,043, or a return of 3·46 per cent. upon the capital cost of works under the control of the Board.

53. The amount required to pay interest, calculated at rates varying from 6 per cent. to 4 per cent. on the municipal debentures taken over by the Board, and 3·789 per cent. on moneys provided out of Government Loans raised for general purposes, is £208,527 1s. 1d., to which must be added £4,497 19s. 5d. for depreciation in the value of machinery, working plant, buildings, &c., and £67,799 6s. working expenses, making the total expenses of the Board £280,824 6s. 6d., whilst the revenue was £259,843 8s. 9d.; there was, therefore, a net deficiency on the year's transactions of £20,980 17s. 9d.

	WATER.			SEWERAGE.		
	£	s.	d.	£	s.	d.
Maintenance ... ..	23,714	6	4	20,037	14	11
Management ... ..	13,780	19	10	10,266	4	11
Depreciation ... ..	3,481	16	5	1,016	3	0
Interest ... ..	141,098	5	2	67,428	15	11
Total Expenses	£ 182,075	7	9	98,748	18	9
Revenue	£ 174,357	14	4	85,485	14	5
Deficiency	£ 7,717	13	5	13,263	4	4

54. There was also a debit balance of £9,983 0s. 9d. in the transactions of the half-year ending 30th June, 1895.

	WATER.			SEWERAGE.		
	£	s.	d.	£	s.	d.
Maintenance ... ..	12,506	9	10	8,626	6	2
Management ... ..	7,187	0	5	5,624	7	0
Depreciation ... ..	775	16	5	230	15	8
Interest ... ..	71,383	2	9	32,124	0	3
Total Expenses ... ..	£ 91,852	9	5	£ 46,605	9	1
Revenue ... ..	£ 85,364	16	0	£ 43,110	1	9
Deficiency ... ..	£ 6,487	13	5	£ 3,495	7	4

55. The total debit balance for the eighteen months on both water and sewerage was therefore £30,963 18s. 6d.

The cause of this deficiency is the large shrinkage in the Municipal assessments on which the water and sewerage rates are based, the alterations in the city assessments alone being responsible for a reduction in the Board's revenue of nearly £10,000 per annum, while the suburban revenue was lowered from the same cause by a like amount.

Another reason for the shortage is the increase in the capital debt, particulars of which have already been given, which rendered it necessary for the Board to debit themselves with an additional sum of about £28,000 in order to meet interest charges.

56. Up to the end of 1894 the accumulated credit balance amounted to £34,500 6s. Deducting therefrom the deficiency for the eighteen months ending 30th June, 1896, there will still remain £53,536 7s. 6d. The Board do not propose to make any alteration in the rates at present charged, but it may be found necessary before the end of the present year to consider the advisability of abolishing the concession now granted of 5 per cent. for prompt payment.

57. The stormwater ducts constructed by the Government, and transferred to the Board in terms of the "Metropolitan Water and Sewerage Act Extension Act of 1894," in order that revenue may be collected in connection with the same, are a constant source of loss. The capital cost of these works is debited to the Board, although many of them cannot be considered in any way adjuncts to the main sewerage system, and the Board are precluded by the Act from striking a rate of more than 3 per cent. of the assessed annual value of the premises within the area draining into the ducts.

The Act further provides that when the sewerage system is extended to any district or drainage area within which a stormwater drain has been constructed, the stormwater drainage rate is no longer to be charged. The value of the ducts constructed within sewered districts is £37,944, for the payment of interest and expenses upon which no revenue can be collected.

The cost of the stormwater drains constructed in districts not at present liable for sewerage rates is £90,598; but in these cases the rates that can be collected fall far short of the sum required for interest and other expenses. The total cost of the stormwater drains transferred to the Board is therefore £128,542, the sum required to meet interest and working expenses is £6,371, but the rates collected only amount to £4,223, or a deficiency of £2,148 per annum.

In

In order to arrive at even this unsatisfactory result it has been necessary to charge premises within some of the areas the maximum rate allowed by the Act, viz., 7d. in the £, which is the same as that charged for the benefits of a complete sewerage system in the reticulated districts.

The Board consider this a very great hardship on the owners of the properties concerned, as in many instances their dwellings are situated on the top of the ridge forming the watershed, and long distances from the drains; they consequently derive little or no benefit whatever from the work, yet have to contribute a sum equal to a full sewerage rate.

The Board feel so strongly on this point that they intend, in view of the prospective transfer of other drains now nearing completion, to address the Minister specially on the subject before imposing a rate on any additional areas.

58. The amount of revenue outstanding on 30th June was £43,970 15s. 11d., of which the following are the principal items:—Government rates, £1,182 13s. 8d.; municipal rates, £285 19s. 6d.; domestic rates—houses, £8,950 2s. 8d.; land, £6,648 6s. 1d.; meters, £13,814 8s. 2d.; churches and charitable institutions, £6,681 16s. 1d.; compulsory drainage, £4,258 14s. 6d.; plumbers and drainers, £1,156 5s. 9d.; and Richmond Water Supply, £99 15s. 11d.

59. The gross receipts paid into the Treasury during the eighteen months, exclusive of Richmond rates, amounted to £374,333 2s. 1d. Legal proceedings were taken for the recovery of £8,291 12s. 1d.

60. The number of premises which became liable for water rates was 7,423, and sewerage rates, 2,373, making the total number now rated—water, 115,990; sewerage, 45,542. Rate notices to the number of 337,278 were delivered.

61. Four hundred and eighty-three notices were served by the Waste-water Inspectors in reference to infringements of the Board's by-laws; and 197 leaky taps were repaired by them in the course of their inspections without charge to the consumers.

62. The report of the Medical Adviser to the Board as to the health of the staff and employees is very satisfactory. Two deaths occurred—one from cancer, and the other from phthisis—both the victims being elderly men. One case of typhoid fever is reported, the patient being an officer of the clerical staff. No case of disease occurred which could be traced to defective ventilation, or attributed in any way to the Board's sewers, and the health of the sewer maintenance-men, notwithstanding the severe heat of last January and February, and the virulent epidemic of typhoid fever, was extremely good.

63. A most excellent report by the Medical Adviser is attached hereto showing the very admirable results which have been achieved by reason of the extension of the water and sewerage systems to the outlying suburbs. Dr. Kendall has furnished many interesting tables, from which it will be seen that the general health of the community, as shown by the death-rate, has greatly improved, and the mortality from such diseases as typhoid fever, diphtheria, and phthisis decreased. It is interesting to note that from personal inquiry it has been demonstrated that not a single case of typhoid fever originated on premises the sanitary arrangements of which were in accordance with the by-laws of the Board.

From the statistics quoted by the Medical Adviser, it will be noticed that by comparison of the death-rate from enteric fever in various cities of the world the City of Sydney holds a very enviable position, which result is no doubt fairly attributable to the Board's operations.

64. The Comptroller of Stores reports that the value of the goods received by him was £43,298, and issued £54,083, leaving a balance of stock on hand of the value of £19,235.

65. The personnel of the Board has been considerably altered, the following changes having taken place :—

On 1st April, 1895, Mr. R. R. P. Hickson, M. Inst. C.E., and Mr. W. L. Vernon, F.R.I.B.A., resigned their appointments as official members, their places being filled by the appointment, on 10th April, 1895, of Colonel T. Rowe, F.R.I.B.A., and Mr. G. A. Mansfield, F.R.I.B.A., respectively.

On 10th March, 1896, Mr. C. W. Darley, M. Inst. C.E., resigned his appointments as President and official member, on taking over the duties of Engineer-in-Chief for Public Works; and, on the 12th March, Colonel Rowe was appointed President, and Mr. J. Macpherson an official member.

On 23rd March, 1896, Alderman J. Ahearn was elected a suburban member in lieu of Alderman G. W. Lander, who retired by effluxion of time.

Alderman J. Taylor was re-elected unopposed as a City member, and afterwards to the position of Vice-President.

66. In addition to visiting and personally inspecting all the principal works under their charge, the Board held eighty-nine meetings at their offices, the attendance at which is set forth in the following table :—

MEETINGS OF BOARD FROM 1ST JANUARY, 1895, TO 30TH JUNE, 1896.

	Jan.	Feb.	Mar.	Apl.	May	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apl.	May.	June.		
Meetings held...	5	4	5	6	4	5	5	4	4	8	5	6	4	5	6	4	4	5	89 meetings.	
																			Present.	Absent.
C. W. Darley (1).....	4	4	5	3*	...	1*	4	4	4	7	5	6	4	5	2	...	...	...	58	14
J. Taylor.....	5	4	5	6	4	5	5	4	4	7	5	5	4	4	6	4	4	5	86	3
R. R. P. Hickson (2) ..	5	4	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	...
W. L. Vernon (2) ...	5	4	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	...
G. W. Lander (4) ...	5	3	5	6	4	4	5	4	4	6	4	5	4	4	4	...	...	...	67	7
F. Buckle .....	5	4	5	6	4	5	5	4	4	8	5	5	4	5	6	4	4	4	87	2
D. Davis .....	5	4	5	6	4	5	5	4	4	7	2	6	4	4	6	4	4	5	84	5
G. A. Mansfield (2)...	...	...	...	5	4	5	5	4	4	6	5	5	4	4	6	4	4	5	70	4
T. Rowe (4) (6) .....	...	...	...	5	4	4	5	4	4	7	5	6	4	4	6	4	4	5	71	3
J. Macpherson (6) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	4	4	5	16	...
J. Ahearn (7) .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	4	4	5	15	...

(1) Resigned, 10 March, 1896. (2) Resigned, 1 April, 1895. (3) Appointed, 10 April, 1895. (4) Retired, 22 March, 1896. (5) Appointed President, 12 March, 1896. (6) Appointed, 22 March, 1896. (7) Elected, 23 March, 1896. \* Absent from Colony on leave

67. The Board have also to record the retirement, on 30th June, 1895, of Mr. Reginald Bloxsome from the office of Secretary, a position which that gentleman had held since the inception of the Board.

This change was rendered necessary on account of Mr. Darley giving his whole time to the position of President, in conjunction with that of Engineer-in-Chief for Metropolitan Sewerage Construction.

The positions of Secretary and Chief Clerk were then amalgamated, and Mr. W. Holmes, the occupant of the latter post, appointed to the new office.

68. Enclosed are the Reports of the Engineer, Mr. J. M. Smail, M.Inst. C.E., and other heads of branches, together with the Balance-sheet.

WILLIAM HOLMES,  
Secretary.

THOMAS ROWE, Col., F.R.I.B.A.,  
President.

DESCRIPTION

## Description of Sydney Waterworks at end of June, 1896.

The source of supply is from the Nepean River, and two of its tributaries, the Cordeaux and Cataract Rivers. The catchment area is about 354 square miles. Across the Nepean River is built a concrete dam 10 feet high, which is designed to divert a portion of the stream only into the tunnel, and lift it to level of crown of the same. The water is then taken by a tunnel  $4\frac{1}{2}$  miles in length to the Cataract River. Another concrete dam, similar to that on the Nepean, is thrown across this river just below the outlet of the tunnel from the Nepean, and the water is thence conveyed by a tunnel for about  $1\frac{1}{2}$  miles, and then by a series of open canals and tunnels, making a total distance from the source of about  $40\frac{1}{2}$  miles to Prospect Reservoir. There are  $11\frac{3}{4}$  miles of tunnels and about  $28\frac{1}{2}$  miles of open canal from the off-take to the Prospect Reservoir. Several gorges are crossed—some by inverted siphons, others by pipe aqueducts.

### Prospect Reservoir.

This reservoir covers an area, when full, of 1,261 acres, and has a capacity of 10,812,313,000 gallons.

The dam is earth with a clay-puddle core, and is 7,300 feet long, maximum height 84 feet, with slopes of 3 to 1 on the water side, and  $2\frac{1}{2}$  to 1, with two 15-foot berms, on the outer side, and is 30 feet wide on the top; the water-face is covered with heavy bluestone pitching. When quite full there is 6,744,343,000 gallons available by gravitation.

The water is drawn off from the reservoir through a valve-tower into pipes placed in a brick tunnel, carried outside and round the northern end of embankment, and is discharged through controlling valves into a basin (at the end of this basin is placed a gauge-weir, from which can be read the quantity passing over daily), from which it then proceeds by an open canal for 5 miles to the Pipe Head Basin, situated  $16\frac{1}{2}$  miles from Sydney, and is then conveyed by a wrought-iron pipe, 6 feet in diameter, to Potts' Hill, a distance of 5 miles.

### Potts' Hill Balance Reservoir.

The water is delivered here into a 100,000,000-gallon tank, built partly in excavation, partly in bank, the bottom of which is lined with hydraulic lime concrete, and the sides, which are laid to slopes of 1 to 1, are lined with dry-coursed rubble. This work is designed to tide the city over any interruption of supply from Prospect, as well as to prevent fluctuation of head of pressure.

### Screening Tank and Trunk Mains.

This screening-tank is of brick, built in two concentric rings. The water is delivered into the outer ring, and passes through a series of copper-gauze screens of 840 meshes to the inch. These screens are arranged so that the orifice which they fill can be closed, and the screen taken out and scoured. From these tanks the water passes into two 48-inch cast-iron mains.

The 48-inch main first laid continues with same diameter to Lewisham, whence it bifurcates, one branch (48-inch) leading to Petersham Reservoir, the other (42-inch) to Crown-street Reservoir. The new 48-inch main was completed in 1893, and is worked alternately with the old. The two trunk mains are connected at New Canterbury Road, Petersham.

### Crown-street Reservoir and Pumping-station.

Crown-street Reservoir is built of brick, and contains 3,250,000 gallons. The top-water level is 141 feet above high-water mark. At this place is situated the main pumping-plant, consisting of three compound high-duty pumping-engines. No. 1 Worthington pumping-engines are capable of raising 500,000 gallons per hour to the Paddington Reservoir, a height of 70 feet above the pumps; No. 2 Worthington pumping-engines are capable of raising 210,000 gallons per hour to Woollahra Reservoir, a height of 140 feet above the pumps, and also of raising 200,000 gallons per hour to Waverley, a height of 220 feet above pumps. Owing to the small storage capacity at Paddington and Woollahra these engines are not being worked to their greatest advantage, as they have to start and stop at short intervals. No. 3 pumping-engines, of the horizontal compound condensing rotative direct-acting type, designed and erected by Mort's Dock and Engineering Company, are capable of raising 100,000 gallons per hour to a height of 219 feet.

Four 142-h.p. Babcock and Wilcox boilers generate the requisite steam.

### Paddington Reservoir.

Paddington Reservoir, top-water level of which is 214 feet above high-water mark, or 73 feet above Crown-street, is built of brick, and contains 2,000,000 gallons, and is supplied by a 36-inch cast-iron main from Crown-street pumps, and distributes the water through a 24-inch cast-iron main *via* Begg-street, and a 36-inch *via* Park Road.

### Woollahra Reservoir.

Woollahra Reservoir, top-water level of which is 282 feet above high-water mark, or 141 feet above Crown-street, is built of brick, and contains 1,000,000 gallons, and is supplied by a  $24\frac{1}{2}$ -inch wrought-iron main from Crown-street, and distributes the water through a 20-inch main.

### Waverley Reservoir.

Waverley Reservoir top-water level is 360 feet above high-water mark, and 78 feet above Woollahra, is built of brickwork, and contains 1,037,000 gallons. It distributes the water through a 15-inch main. Supplemental tanks in Waverley Park, erected at an elevation of 20 feet above the present reservoir, now supply the upper zones of the district.

Petersham

### Petersham Reservoir.

This reservoir is built of brick, and contains 2,157,000 gallons. The top-water level is 166 feet above high-water mark, and receives its supply by gravitation from Potts' Hill through a 48-inch cast-iron main, which branches off the 48-inch main at Lewisham, and distributes the water through two 18-inch and one 20-inch outlets, the latter about being utilised.

### North Sydney Supply—Ryde Pumping-station, Ryde Hill Tank, and Chatswood Tanks.

North Sydney, which was supplied from Paddington by a submarine pipe up to the end of 1891, has since received its supply from Potts' Hill, the water being delivered through a cast-iron pipe partly 24-inch and partly 20-inch diameter into a balance reservoir, near the Ryde Railway Station. Here a pair of powerful pumps raise the water through a 24 $\frac{1}{2}$ -inch wrought-iron rising main into a 1,000,000-gallon wrought-iron tank to Ryde Village, at a level of 234 feet above high-water mark, and by a continuation of the same main into a pair of each 1,500,000-gallon wrought-iron tanks at Chatswood, at an elevation of 370 feet above high-water mark.

From the first-named tank the whole of Ryde, Gladesville, and Hunter's Hill get their supplies, and a 9-inch branch was extended over the Parramatta River and Iron Cove Bridges for the supply of the heights of Balmain.

The pair of iron tanks at Chatswood afford a liberal supply to Willoughby, North Sydney, and Mosman, and the newly-reticulated district of Gordon and Hornsby.

### Gordon, Wahroongah, and Hornsby.

This popular residential district, extending from Chatswood to Hornsby, and adjacent to the Milson's Point Railway, is now supplied with water from the Board's works. A small pumping-plant has been erected at Chatswood, from whence water is pumped to Wahroongah into a 40,000-gallon elevated tank, at a height of 720 feet above sea-level. The pumping main, which is also used as a main distributory, is 10 in. in diameter, and is 7 $\frac{1}{2}$  miles in length; a further extension, also of same diameter, was laid to Hornsby. About 9 miles of reticulation mains of 6-inch and 4-inch diameters have been laid along such streets in the various centres of population as are sufficiently built upon to warrant the outlay. Further extensions of this scheme are intended, in the immediate future, to meet the growing wants of residents.

### Campbelltown.

Campbelltown is supplied direct from the main canal by gravitation, a 6-inch pipe from the canal at 16 miles 40 chains being laid to the town, a distance of 2 $\frac{1}{2}$  miles, and the reticulation consisting chiefly of 4-inch mains.

### Liverpool.

Liverpool receives its supply by a 9-inch pipe from the main canal at Cecil Hills, which is extended as far as Mount Young, and thence by a 6-inch main to the town. In order to tide over any possible interruption to the flow in the canal a 4,000,000-gallon earthen reservoir has been constructed close to the canal, and is filled from the canal.

### Smithfield.

The Smithfield water-works, completed in July, 1895, were designed to supply the township of Smithfield, which is situated on the Prospect Creek, about 3 miles south-east of the reservoir. The works included may be briefly summarised as under:—

An off-take on the main Canal, about 3 miles below Prospect Reservoir; a circular concrete tank on the bank of said canal, having a capacity of 100,000 gallons; a 4-inch main to the township; and mains totalling about 3 $\frac{1}{2}$  miles of the same diameter laid in all streets occupied by dwellings. The works cost about £2,900, and supply a population of 300.

### Granville, Auburn, and Rookwood.

Granville is supplied by gravitation through a 15-inch branch from the 72-inch wrought-iron trunk main laid along Woodville Road for a distance of 2 $\frac{1}{2}$  miles

Rookwood and Auburn receive their supply from a 12-inch main along Joseph-street from Potts' Hill.

### Ashfield.

A part of Ashfield is too elevated to receive a supply by gravitation from Potts' Hill level; therefore the loftier parts are supplied from the Woolahra Reservoir by the Petersham trunk main, which conveys the water to a 100,000-gallon wrought-iron tank, erected on a brick circular support, at an elevation of 223 feet above high-water mark.

### Hurstville, Kogarah.

The bulk of the supply to Kogarah is given by gravitation from 12-inch mains connected with the Petersham Reservoir system. The higher portions of this district are supplied with water from Penshurst, where is erected a 20,000-gallon cast-iron tank, built on brick piers. The water is pumped from Carlton Station by the small steam pumping-plant (Blake's duplex), which was formerly erected at North Sydney to supply that district, prior to the completion of the Ryde pumps. The gas-engine is still occasionally used.

### Richmond.

In July, 1893, the Board assumed the temporary management of the Richmond water-works, which were completed in 1892, and had since then been worked locally by the Richmond Municipal Council. The scheme, which is entirely unconnected with the Sydney supply system, consists of a small pumping-plant—two horizontal 6-horse-power engines, coupled and geared, working two brass-lined single-barrel deep-well pumps (Tangyes), fixed 61 ft. 6 in. below floor of engine-room—erected on the left bank of the Hawkesbury River, just below the confluence of the Grose and Nepean; a circular brick service tank, 60 ft. in diameter, having a capacity of 225,000 gallons; a 6-in. supply main to Richmond, 4 miles in length; and 5 $\frac{1}{2}$  miles of reticulation mains, 3 in. and 4 in. diameter, within the town.

## Description of the Metropolitan Sewerage System.

THE Metropolitan Sewerage System, under the control of the Board of Water Supply and Sewerage, comprises the old and new systems, the former having been initiated by the old City Commissioners in 1853, and was carried out by their successors, the present City Council, which was incorporated in 1857. The City Council had control of the water and sewerage works within the city until the year 1888, when the waterworks were transferred to the Board. The transfer of the existing sewerage-works followed in 1889.

The old system comprised four main outfalls, with subsidiary sewers along the principal streets, which in turn received the reticulation sewers of the minor thoroughfares. The four main outfalls discharged the sewage of the city into the various parts of the harbour at Blackwattle Bay, Darling Harbour, Sydney Cove, and Woolloomooloo Bay, respectively. This system was designed on the principles of what is termed the "combined system." The pollution of the freshness of the harbour, by the discharge of the sewage of the city, and consequent danger to public health, led to the appointment of a Commission to inquire into the best means of diverting the sewage from the harbour and otherwise disposing of same. The new intercepting system was the outcome of the labours of the Commission. The main works were carried out by the Government, and on completion were transferred, with all other existing works, to the control of the Board by Act of Parliament. The system, which is on the lines of the partially "separate system," intercepts all sewage, which heretofore was discharged into the harbour, at a level of 40 feet above high-water mark. This is termed the gravitation zone. The sewage from the low-level area, *i.e.*, between high-water mark and 40 feet contour, will eventually be pumped into the gravitation sewers, and discharged into the ocean or into the sewage farm.

The system consists of two main outfalls, named the northern and southern respectively, the former discharging into the Pacific Ocean, at a point named "Ben Buckler," at Bondi, and the latter discharging into a sewage farm at "Webb's Grant," on the shores of Botany Bay. These works are of considerable magnitude, and have not been constructed without considerable difficulty and outlay.

### Northern Outfall.

The northern system commences at "Ben Buckler," where a large chamber was constructed in the sandstone rock. From this chamber two channels bifurcate, so as to ensure a free discharge during the prevalence of either northerly, easterly, or southerly gales. From the chamber a shaft extends to the surface for ventilation and escape of air when the sea breaks into the discharge channels. The dimensions of main outfall at chamber is 8 ft. x 7 ft. 6 in., and decreases by decrements to 6 ft. 10 in. x 5 ft. 10 in. at Oxford and Liverpool Streets junction. At this point is a large chamber into which three different branches discharge, *viz.*—The northern branch, which passes under Hyde Park to Castlereagh-street, where it bifurcates, one submain intercepting the sewage from main outfall at Macquarie Point, and the other intercepting the sewers discharging at Queen's Wharf. 2nd. The western branch, which extends along Liverpool-street to and along Kent-street to Miller's Point, intercepting the sewage which discharged into Darling Harbour. 3rd. The south-western branch, which passes under Belmore Gardens, Benevolent Asylum, and along George-street West to Carlton-street, where it bifurcates into two sub-mains, one passing through Darlington, University Grounds, to Camperdown, Newtown, and Petersham, intercepting old city sewers and draining new areas; the other submain passing along George-street West by a long siphon, on account of a depression. Connected with this siphon is a scour chamber and valves for periodic cleansing. This branch extends to the Glebe and boroughs of Balmain and Leichhardt. The whole of the sewage above the 40-foot contour line, which formerly flowed into Blackwattle Bay, is intercepted by this branch and discharged into the ocean. 4th. The Potts Point branch, commencing at Bourke-street, near rear of Darlington Goal, and extending along same for some distance, then passing along Victoria-street, and terminating at Challis Estate. This sewer intercepts a considerable quantity of sewage formerly discharging at Woolloomooloo Bay. 5th. Elizabeth Bay branch, which extends along western bank of Lacrozia Creek and Rushcutter's Bay, intercepting sewage formerly discharging into them. 6th. The Woollahra and Waverley branch, extending along east side of Double Bay valley, passing under Edgecliff Road, and terminating at present at Denison-street, Waverley; this sewer drains the northern watershed of Woollahra and Waverley.

The work was carried through varying formations—in some instances the stratum was indurated sandstone; in others shale, clay, and water-charged drift-sand. Concrete enters largely into the construction of the works, the lining of rock tunnels being principally bluestone concrete rendered with cement mortar. Wherever the outfall sewer crossed natural creeks or watercourses offlet and scour valves were provided. An overflow sewer discharging into Rushcutter's Bay is connected with the main outfall to take surplus water during heavy rain-storms. This sewer was carried across low-lying swampy land on arches and circular piers; the latter were constructed on the same principle as carried out in India.

### Southern Outfall.

The southern main outfall commences at the inlet chamber, which is constructed on the north bank of Cook's River, near its junction with Botany Bay. The sewer is 5 ft. 6 in. in diameter, constructed of concrete, with brick lining rendered with Portland cement. In places the sewer is above the level of the adjoining land, and in others it passes through low sand-hills and swampy ground. Where natural watercourses are passed over, concrete culverts and overflow chambers and valves are provided. The outfall sewer extends to Botany Road, where the size is decreased for a short distance, to 4 ft. 6 in. x 3 ft. 6 in. Hawksley Section: From Botany Road the sewer extends along Bourke-street, through the boroughs of Waterloo, Redfern, and the City of Sydney to Nobbs-street, where the submains from different districts join. This outfall drains the southern watershed of the city and boroughs of Redfern, Waterloo, Alexandria, Macdonaldtown, and Newtown.

### Inlet House.

The sewage passes from the main outfall into the straining-chambers of inlet house. The chambers are in duplicate and controlled by inlet valves, so that when one series is in use the other is being cleaned out. The sewage is strained by means of three circular screens; the mesh varies from 3 inches to 1 inch. The screens are worked by one central shaft, with gearing fixed on the platform at one end, and intercept all extraneous matter before the sewage passes into the siphon-well. From the siphon-well the sewage passes under the bed of Cook's River by a cast-iron siphon 3 ft. 9 in. in diameter laid in a trench and surrounded with concrete. The siphon is connected with a well in outlet house on south side of river, from which the sewage flows along a main carrier, and is distributed over the irrigation-beds and settling-tanks by valves. The valves are of simple construction, and the distribution of the sewage is easily controlled by the farm manager.

### Sewage Farm.

The Sewage Farm is situated on a neck of land called Webb's Grant, the formation of which is raw drift-sand, originally covered with low dense scrub. For agricultural purposes, to be worked at a profit, the soil is useless, but as a filter for crude sewage—this being the state in which the sewage is distributed over it—it cannot be surpassed. The farm is laid out on one side in irrigation-beds, at different levels, so as to enable the manager to command the whole area. On this area the sludge, which is dredged from the inlet house, is conveyed in trucks by a small locomotive to the various beds, and is used as manure. On the other or southern side the ground is laid out in a series of filtering-tanks, the number admitting of the sewage being dealt with intermittently. At times, when circumstances admit, these tanks are cultivated, which assists in keeping the ground clean and improves the soil as a filter. Cattle and pigs are reared and fattened on the surplus products of the farm. The styes are built in concrete, and kept clean by daily washing. Cattle and horses are also taken for agistment. The daily discharge on to the farm is 2,059,200 gallons; this is disposed of over 65½ acres of land prepared to receive same, the irrigation and filtration beds being specially formed and subdrained, the effluent water discharging above high-water mark at Botany Bay.

The farm is now being worked by the Board; the experience of leasing same was not successful.

### Western Suburbs.

The sewerage system for this district is now being carried out by the Government Sewerage Department under a special vote as regards the main ducts. The outfall works are nearly completed, and the eastern branch sewer is now in progress. This sewer drains portions of Marrickville, Petersham, and Leichhardt, and will also receive the sewage from low-level system which will be pumped into it at Meeks' Road pumping-station. The system will also discharge on a portion of the Sewage Farm area upon the western side, further resumption of land having been made for that purpose.

## Rates and Charges for Water, Sewerage, and Stormwater Drainage.

### WATER RATES.

1. The following rates and charges are those which the owners and occupiers of houses, tenements, and lands shall pay in respect of water supplied by the Board, that is to say:—

*For Water supplied for domestic purposes otherwise than by Measure.*

2. (i.) In respect of lands and tenements of which the assessed annual value is £17 or under, 10s. per annum.
- (ii.) In respect of lands and tenements of which the assessed annual value is over £17, a rate of 7d. for each pound sterling on the amount of the assessed annual value up to £300 inclusive; 5d. for each pound sterling on the amount of the assessed annual value in excess of £300 up to £700 inclusive; 4d. for each pound sterling on the amount of the assessed annual value in excess of £700 up to £1,000 inclusive; 3d. for each pound sterling on the amount of the assessed annual value in excess of £1,000 up to £4,000 inclusive; and 2d. for each pound sterling on the amount of the assessed annual value in excess of £4,000.

3. The following rates shall be paid in each year in respect of lands and tenements which are not supplied with water for domestic purposes, and which are not more than 60 yards distant from a main constructed by or vested in the Board, that is to say:—

- (i.) In respect of lands and tenements of which the assessed annual value is £10 or under, a rate of 1s. in the pound.
- (ii.) In respect of lands and tenements of which the assessed annual value is over £10, a rate of 10s. per annum up to the assessed annual value of £17 inclusive.
- (iii.) In respect of lands and tenements of which the assessed annual value is over £17, a rate of 7d. for each pound sterling on the amount of the assessed annual value.
- (iv.) In respect of lands on which no building is erected for human habitation, a rate of 4d. in the pound of the assessed value.
- (v.) The like rates as those above-mentioned shall be charged on all lands and tenements not included in any valuation by the Municipal Council of the City of Sydney or Redfern, or of any Borough or Municipal District, and on all lands for the time being valued by the said Municipal Council of the City of Sydney or Redfern, or by such Borough or Municipal District, at a sum less than the true value thereof.
- (vi.) When any lands or tenements become liable to a rate, or to an increased rate, during the currency of any half-year by reason of the extension of a main or for any other reason whatsoever, then a part of such rate or increased rate, as the case may be, proportionate to the unexpired period of the current half-year, shall become due and be paid forthwith.

*Supply of water by meter.—Charges for water supplied by meter.*

4. The charge for water supplied by meter shall be 1s. per 1,000 gallons for all water consumed up to 20,000,000 gallons per annum, and 9d. per 1,000 gallons for all water consumed in excess of 20,000,000 gallons per annum; Provided that the minimum quantity of water to be charged for, where water is so supplied, shall be 10,000 gallons per annum. Her Majesty's ships will be supplied free of charge.

5. All charges for water supplied by meter shall, unless otherwise provided by a contract made between the Board and the person to be supplied, be paid within one month after service by the Board upon the person liable to pay such charge of a notice in writing setting forth the amount due for water so supplied, and demanding payment thereof within the period of one month aforesaid. Service of any such notice may be effected by serving the same personally on the person named therein, or by sending such notice through the post to the person named therein at his last known place of abode or business; and where the place of abode and the place of business of such person are unknown to the Board, by sending it through the post addressed to him at the lands and tenements to or in respect of which the water is supplied, or by leaving it on such lands and tenements.

6. A discount of £5 per cent. will be allowed by the Board on all rates imposed upon lands and tenements of the assessed annual value of over £17, and on all lands and tenements not supplied with water on which no building is erected for human habitation of the assessed value of over £30: Provided that such rates are paid within thirty days from the date of service of the rate-notice in each half-year. A like discount of £5 per cent. will be allowed by the Board on all charges for water supplied by meter where such charges shall be paid within one month of the delivery of the meter account: Provided that such discount as aforesaid will not be allowed in any case in which its allowance would have the effect of reducing the amount of the rate or meter charge respectively payable below the sum of 10s.

*For water for other than domestic purposes otherwise than by measure.*

- (vi.) The charge for water supplied to gas-engines or oil-engines shall be 5s. per annum for each engine of two horse-power and under, and for every additional horse-power beyond two horse-power an additional charge of 2s. 6d. per annum for each horse-power.
- (vii.) The charge for water supplied to steam-boilers shall be £1 per annum for each steam-boiler up to three horse-power. And for every additional horse-power beyond three horse-power an additional charge of 5s. per annum for each horse-power.

(viii.)

(viii.) The charge for water supplied for actuating ventilators or refrigerators shall be by special fee, according to the following scale, namely:—

Class A.—Passing 60 gals. per hour at 65 lb. pressure—	
1 nozzle,	£6 per annum.
2 „	£4 10s. per annum each.
3 „	£3 10s.
4 „	and upwards, £3 per annum each.
Class B.—Passing 40 gals. per hour at 65 lb pressure—	
1 nozzle,	£3 15s. per annum.
2 „	£3 per annum each.
3 „	£2 10s. per annum each.
4 „	and upwards, £2 per annum each.

*Supply for twelve hours only in each day.*

Provided, however, that the supply of water under this By-law shall be for twelve hours only in each day, and no person having such supply shall continue to use the same for more than twelve hours in any one day.

*Water for trade purposes, &c.*

(ix.) The charge for water supplied for purposes of the undermentioned or other trades shall be at such rates upon such terms and subject to such conditions as may be agreed upon by the Board and the person requiring to be supplied, provided, however, that for any year or part thereof, the minimum charge for water supplied for the undermentioned trades shall be that in each hereunder case set opposite the trade, viz.:—

Photography, and any like process...	...	...	5s. per annum.
Tripe-cleaning	...	...	5s. „
Tying purposes	...	...	5s. „
Laundries	...	...	5s. „
Dyers	...	...	10s. „
Condiment-making	...	...	5s. „
Bottle-washing	...	...	5s. „
Small goods (sweets)	...	...	5s. „
Waterfalls and fountains	...	...	5s. „
Shop-fronts, by hose	...	...	5s. „
Organ motors and such like mechanisms...	...	...	20s. „

*Washing Vehicles.*

(x.) The Board may supply water for the washing of vehicles with a hose, without meter, at the rate of 5s. per annum for each vehicle.

In all cases where special fees are charged the Board reserve to themselves the right of insisting upon a meter being fixed at any time, notwithstanding the fact that the special fee may have been paid. All special fees are in addition to the assessed annual rate of the premises on which such fees are charged, and are payable in advance. All premises on which water is used for other than domestic purposes, and upon which special fees are paid, shall be open for inspection by the inspectors of the Board at any reasonable hour.

2. Assessed rates shall be paid half-yearly in advance, whether a meter is used or not. In the case when a meter is used the meter account will be rendered only when it is in excess of the assessment. Cheques and Post-office orders will be received in payment of rates; but if the cheque tendered by any person as payment for rates due is dishonoured, the Board may cut off his service, and proceed for the recovery of the amount by warrant for distress or otherwise. Cheques and Post-office orders must be crossed in favour of the Board.

3. The minimum charge for water, whether supplied through meter or otherwise, for domestic purposes and for purposes other than domestic, is the assessed annual rate. If the water is supplied by meter, and the meter account exceeds the assessment (calculated at the rate of 1s. per 1,000 gallons), then such excess shall be charged in addition to the assessment.

4. One meter may be allowed to supply several tenements when such tenements are occupied by one person or firm as a place of business or abode, and the meter account will be credited with the assessments of all such tenements. One service only will be allowed under these conditions, upon which the meter will be fixed, and all the water for such tenements must pass through such meter. Where peculiar circumstances entail a departure from the above, and two services are absolutely necessary, then there shall be a meter on each service pipe.

*Building Charges, &c.*

(xi.) The charge for water supplied for building and plastering purposes, for buildings to be used either wholly or partly as dwelling-houses, shall be at the rate of one half-penny per cubic yard on the cubical contents of each building. The Board will supply water for all other buildings either by meter or at the rate above-mentioned per cubic yard on the cubical contents of each building as the Board shall determine: Provided that before any water shall be used through meter for building purposes such meter shall be submitted to the Board in each case for examination, and must pass the sensitive test; and the minimum charge in each case for water so supplied through meter shall be 10s.

(1.) The charge for water supplied for plastering rooms only shall be 2s. 6d. for each room, and for the building of wash-houses, water-closets, coppers, and chimneys only, 2s. 6d. each.

(2.) The charge for water supplied for making and mixing of concrete for foundations of wooden blocks, stone cubes, or other form of permanent roadway or pavement, shall be at the rate of £1 1s. per 1,000 square yards by superficial measurement of road surface, and for all other concrete, brickwork, or masonry, at the rate of three half-pence per cubic yard, as measured on the work.

(xii.)

- (XII.) Any person who maintains horses or cows may be supplied with water, without meter, from the domestic service for the sum of 5s. per annum for each animal, in addition to the assessed annual rate of the premises on which such animal is maintained or supplied with water.
- (XIII.) All lands or premises actually supplied with water by the Board, on which any one or more head of horses or cattle shall be kept or maintained, shall be liable to an extra rate or charge (beyond and in addition to the assessed annual rate of the premises) of 5s. per head for each head of horses or cattle kept or maintained on such lands or premises. And where such lands or premises are not actually supplied with water by the Board they shall be liable to an extra rate or charge (beyond and in addition to the assessed annual rate of the premises) of 2s. 6d. per head for each head of horses or cattle kept or maintained on such lands or premises.
- (XIV.) The Board may supply water for gardens (and for such purpose may permit a hose and stand-pipe to be used) without meter, at the rate of 10s. per annum per 1,000 square feet superficial area, or part thereof, and 2s. 6d. for every additional 250 square feet superficial area, or part thereof, in addition to the assessed annual rate of the premises to which such garden belongs or is attached.

#### SEWERAGE RATES.

1. The following rates and charges are those which the owners and occupiers of houses, tenements, or lands shall pay for or in respect of sewerage, or for or in respect of the liability of such houses, tenements, or lands to rates and charges for sewerage, that is to say :—

- (i.) Where the premises are of the assessed annual value of £17 or under, 10s. per annum.
- (ii.) Where the premises are above the assessed annual value of £17, a rate of 7d. for each pound sterling on the amount of the valuation.

2. The following rates shall be paid in each year in respect of vacant and unoccupied lands and tenements, on which no building is erected for human habitation, and which are not connected with any sewer or drain under the control of the Board, and which are situated within 150 feet from a sewer or drain belonging to the Board, that is to say—

- (i.) A rate of 4d. for each pound sterling on the amount of the assessed value.

3. A discount of £5 per cent. will be allowed by the Board on all rates imposed upon lands and tenements of the assessed annual value of over £17, and on all vacant and unoccupied land unconnected with any sewer under the control of the Board, and on which no building is erected for human habitation of the assessed value of over £30: Provided that such rates are paid within thirty days from the date of service of rate-notice in each half-year: Provided that such discount as aforesaid will not be allowed in any case in which its allowance would have the effect of reducing the amount of the rate payable below the sum of 10s.

#### METROPOLITAN DRAINAGE BY-LAWS.

Whereas by the "Metropolitan Water and Sewerage Act Extension Act of 1894" the Board of Water Supply and Sewerage is authorised and empowered to make, alter, and repeal By-laws: Now, the Board of Water Supply and Sewerage, under and by virtue of the powers contained in the above-mentioned Act, do hereby make the By-laws following, that is to say :—

##### *Assessment and Rates.*

1. For the purposes of these By-laws the value of lands and tenements in each year shall be the value (if any) at which the same are for the time being assessed for rating purposes by the Municipal Council of the City of Sydney or the Borough or Municipal District respectively in which such lands or tenements are situated, on the 1st day of January and the 1st day of July respectively, as the case may be, in each year; and such value shall continue to be the value of such lands or tenements for the purposes aforesaid during such year.

2. The rates which are respectively set opposite to the descriptions of stormwater drains hereunder mentioned are those which shall be paid by the owners or occupiers of the lands or tenements situated within the boundaries of the drainage areas respectively proclaimed in respect of such stormwater drains, and for the purpose of assessing such rates, the valuation of such lands and tenements by the Municipal Council of the City of Sydney or the Borough or Municipal District respectively within which the same respectively are situated, shall be taken as the valuation thereof by the Board under the said Act. The minimum rate payable under these By-laws shall be in each case 1s. per annum :—

Rushcutter's Creek Drain.—A rate of 7d. for each pound sterling on the amount of the valuation of the lands or tenements.

Willoughby Falls Creek and Careening Cove Drain.—A rate of 6d. for each pound sterling on the amount of the valuation of the lands or tenements.

Blackwattle, Glebe, and Denison Ward Drain.—A rate of 7d. for each pound sterling on the amount of the valuation of the lands or tenements.

Beattie-street, Balmain, Drain.—The rate to be paid by the owners or occupiers of the lands or tenements situated within the boundaries of the drainage area proclaimed in respect of the Beattie-street, Balmain, Drain, shall be 2d. for each pound sterling on the amount of the valuation of such lands or tenements.

Iron Cove Creek, Ashfield, Burwood, Enfield, and Canterbury, Drain.—A rate of 3d. for each pound sterling on the amount of the valuation of all lands or tenements situated within the drainage area described in the Schedule hereto as applicable to the said drain, and a rate of 2d. for each pound sterling on the amount of the valuation of all lands or tenements situated outside of the area described in the Schedule hereto and within the drainage area proclaimed in respect of the said drain.

Long Cove Creek, Leichhardt, Ashfield, and Petersham Drain.—A rate of 2d. for each pound sterling on the amount of the valuation of all lands or tenements situated within the drainage area described in the Schedule hereto as applicable to the said drain, and a rate of 1d. for each pound sterling on the amount of the valuation of all lands or tenements situated outside of the area described in the Schedule hereto and within the drainage area proclaimed in respect of the said drain.

Erskineville and Munni-street, Newtown, Alexandria, and Erskineville Drain.—A rate of 7d. for each pound sterling on the amount of the valuation of the lands or tenements.

3. All such rates as before-mentioned shall be paid in advance by equal payments on the first day of January and the first day of July in each year, and the first payment shall be made at the time when an owner or occupier becomes liable to pay such rates.

4. A discount of £5 per cent. will be allowed by the Board on all rates imposed upon houses, tenements, or lands of the assessed annual value of over £17, and on all lands not supplied with water on which no building is erected for human habitation, of the assessed annual value of over £30: Provided that such rates are paid within thirty days of the date of service of rate-notice in each half-year. A like discount of £5 per cent. will be allowed by the Board on all charges for water supplied by measure where such charges shall be paid within one month of the delivery of the meter account: Provided that such discount as aforesaid will not be allowed in any case in which its allowance would have the effect of reducing the amount of the rate or meter charge respectively payable below the sum of 10s.

#### FOR COUNTRY DISTRICTS IN COUNTY OF CUMBERLAND.

For water supplied for domestic purposes otherwise than by measure:—

- (i.) On every house, tenement, or land of £10 assessed annual value and under, 10s. per annum.
- (ii.) On every house, tenement, or land above the assessed annual value of £10, a rate of 1s. for each pound sterling on the amount of the valuation.
- (iii.) Vacant or unimproved lands are subject to a rate of 4d. for each pound sterling on the amount of the valuation.
- (iv.) The like rates as those abovementioned shall be charged on all lands, tenements, and hereditaments not included in any valuation by any Borough or Municipal District, and on all lands for the time being valued by any such Borough or Municipal District at a sum less than the true value thereof.

For water supplied by measure:—

- (v.) The charge for water supplied by measure shall be 1s. per 1,000 gallons for all water consumed up to 20,000,000 gallons per annum, and 9d. per 1,000 gallons for all water consumed in excess of 20,000,000 gallons per annum.

## Analyses.

## WATER SUPPLY TABLE.

Year.	Average Daily Supply.	Total Supply for Year.	Number of Houses supplied.	Estimated Population supplied.	Average Daily Supply during year.		Mains.	
					Per House.	Per Head of Estimated Population.	Mains laid.	Mains cleaned.
	gallons.	gallons.			gallons.	gallons.	miles yds.	miles yds.
1888.....	8,144,169	2,972,021,623	61,718	296,246	122	27.49	53 893	4 890
1889.....	8,820,000	3,219,244,159	67,924	320,035	129	27.05	86 1,403	16 907
1890.....	8,430,034	3,097,402,486	71,501	343,204	118	24.70	75 866	7 278
1891.....	9,540,102	3,482,237,514	76,093	365,240	125	26.11	102 250	26 1,563
1892.....	12,120,152	4,480,273,580*	78,926	378,885	133	32.12	89 915	29 741
1893.....	12,533,652	4,574,782,838	81,238	399,182	153	32.12	15 1,711	26 456
1894.....	13,738,874	5,014,689,009	83,621	401,880	164	34.23	46 1,262	4 295
1 Jan., 1895, to 30 June, 1896 ..	16,045,014	9,194,922,372	85,059	408,282	196	40.76	98 1,568	3 1,028

## WATER RATES.

Year.	Summary of Credits.				Gross Receipts	Less Refunds, &c., by Treasury.	Net Receipts.	Outstanding Accounts.	
	Rates cancelled.		Discounts.					Rates.	Plumbers and Others.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.					
1888.....	276 4 0	.....	90,089 9 11	657 14 6	89,131 15 5	40,791 2 6	943 10 0		
1889.....	2,607 4 9	.....	147,045 0 1	1,105 6 9	146,939 13 4	34,672 3 2	707 11 6		
1890.....	3,325 10 10	.....	158,949 17 0	60 11 1	158,889 5 11	24,691 7 0	2,067 8 6		
1891.....	5,614 16 6	.....	165,264 17 7	127 16 8	165,137 0 11	26,028 4 2	771 3 6		
1892.....	4,438 16 9	.....	163,024 16 8	204 13 4	162,820 3 4	19,163 9 1	3,190 9 3		
1893.....	1,537 0 7	.....	158,500 1 11	222 16 10	158,278 5 1	18,042 15 5	916 2 1		
1894.....	919 19 1	.....	159,169 15 6	342 7 6	158,827 8 0	19,951 17 4	2,263 10 5		
To June, 1895 (6 months).....	484 4 2	5,962 16 10	80,984 19 5	348 0 7	80,636 18 10	24,149 19 9	685 5 4		
.. 1896 (12 months).....	1,301 14 5	9,523 14 4	165,642 6 3	333 9 2	165,308 17 1	30,377 13 5	618 19 2		

## MAINTENANCE.

## MANAGEMENT.

Year.	Maintenance of Mains, &c	Wages and Expenses.	Coals.	Rents.	Total Maintenance.	President and Board Fees.	Salaries.	Stationery and Printing.	Advertising and Incidental.	Total Management.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1888.....	677 17 2	7,676 13 3	901 14 6	767 6 8	10,023 11 6	1,253 10 3	6,069 18 10	1,303 7 1	625 6 4	9,182 2 6
1889.....	3,289 3 2	13,856 5 10	1,489 13 10	1,756 10 0	20,385 12 10	1,708 12 6	12,346 15 8	933 9 11	1,193 13 7	16,182 11 8
1890.....	3,076 3 1	13,636 9 4	2,272 11 11	960 10 9	20,646 1 1	1,242 10 0	10,912 0 2	965 6 9	1,122 12 0	14,242 8 11
1891.....	5,630 2 7	14,165 6 3	2,668 6 3	1,107 9 4	23,571 4 5	1,242 10 0	11,204 3 1	948 0 9	1,290 2 1	14,694 15 11
1892.....	13,065 8 5	15,255 2 3	1,729 17 5	1,100 4 0	31,090 12 1	1,041 18 8	10,747 17 6	641 14 4	1,556 3 10	13,987 14 4
1893.....	9,498 14 5	12,107 9 7	1,635 13 2	1,101 15 10	23,343 13 0	859 3 4	10,997 18 11	560 5 8	1,360 12 8	13,798 0 7
1894.....	11,302 12 8	10,764 12 0	2,024 6 5	1,131 4 8	25,222 16 6	847 10 0	11,060 3 8	799 4 1	1,344 5 6	14,051 3 3
To June, 1895 (6 months).....	5,106 9 4	5,806 0 6	871 7 6	722 12 6	12,506 9 10	437 10 0	5,620 7 6	463 14 8	665 8 3	7,187 0 5
To June, 1896 (12 months).....	10,667 0 1	9,767 12 2	1,386 3 8	1,293 10 5	23,714 6 4	1,015 6 6	10,851 8 5	622 17 3	1,291 7 8	13,780 19 10

## GENERAL SUMMARY.

Year	Revenue.	Total Maintenance.	Total Management.	Total Maintenance and Management.	Interest.		Total Interest.	Depreciation.	Total Expenses.
					On Loan Capital.	On Debentures.			
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1888.....	125,485 19 0	10,023 11 6	9,182 2 6	19,205 14 0	59,976 7 3	4,300 0 0	64,276 7 3	.....	83,432 1 3
1889.....	138,923 18 3	20,385 12 10	16,182 11 8	36,568 4 6	101,477 5 5	4,150 0 0	105,627 5 5	2,446 8 8	144,611 18 7
1890.....	145,990 9 4	20,646 1 1	14,242 8 11	34,788 10 0	195,089 19 9	4,000 0 0	199,089 19 9	3,421 15 2	147,310 4 11
1891.....	165,831 0 11	23,571 4 5	14,684 15 11	38,256 0 4	107,981 11 8	4,000 0 0	111,981 11 8	3,916 18 0	154,164 10 0
1892.....	155,886 7 0	31,090 12 1	13,987 14 4	45,078 6 5	111,869 8 2	4,000 0 0	115,869 8 2	377 12 3	161,825 6 10
1893.....	157,426 11 8	23,343 13 0	13,798 0 7	37,141 13 7	115,187 0 10	4,000 0 0	119,187 0 10	2,511 15 2	158,840 9 7
1894.....	161,167 1 3	25,222 16 6	14,051 3 3	39,273 19 9	115,600 5 5	4,000 0 0	119,600 5 5	1,771 18 6	160,706 3 8
To June, 1895 (6 months) ..	85,364 16 0	12,506 9 10	7,187 0 5	19,693 19 3	69,383 2 9	2,000 0 0	71,383 2 9	775 16 5	91,562 9 5
.. 1896 (12 months)....	174,357 14 4	23,714 6 4	13,780 19 10	37,495 6 2	137,008 5 2	4,000 0 0	141,008 5 2	3,481 16 5	182,075 7 9

## SEWERAGE TABLE.

Year.	Number of Houses Drained.	Estimated Population served.	New Sewers Laid During the Year.		Existing Sewers.	Total Length of Sewers.	Storm-water Drains Laid.				Ventilating Shafts Erected.	Sewers Ventilated.
			By Board.	By Govt.			By Board.	By Govt.	Existing.	Total.		
			miles.	miles.	miles.	miles.	miles.	miles.	miles.	miles.	feet.	miles.
1890 .....	22,765	109,272	0.33	13.08	99.02	122.03	.77	Nil.	2.38	3.15	12,639	14.6
1891 .....	20,884	129,043	21.53	4.46	122.03	148.02	Nil.	1.23	3.15	4.38	47,628	70.74
1892 .....	31,402	150,729	22.50	2.42	148.02	172.04	.47	.77	4.33	6.62	49,030	79.25
1893 .....	36,002	173,007	4.35	5.05	172.04	182.34	.10	2.38	6.62	9.10	50,230	81.43
1894 .....	39,965	191,832	18.35	1.27	182.34	201.95	.06	.66	9.10	9.82	54,405	92.50
1895-96 .....	44,462	213,417	22.63	5.62	201.95	230.29	.00	4.00	9.82	14.42	87,505	182.50

## SEWERAGE RATES.

Year.	Summary of Credits.		Gross Receipts.	Less Refund by Treasury.	Net Receipts.	Amount Outstanding.	
	Rates Cancelled.	Discounts.				Rates.	Compulsory Drainage, and Others.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1890 .....	3,491 18 7	.....	74,180 6 7	48 5 10	74,132 0 9	7,619 4 5	.....
1891 .....	2,428 12 7	.....	80,555 16 8	50 1 7	80,505 15 1	8,320 2 10	3,224 14 3
1892 .....	1,104 19 6	.....	86,090 1 7	119 6 1	86,570 15 6	9,597 7 4	3,500 0 2
1893 .....	843 12 3	.....	95,519 6 2	143 7 0	95,375 19 2	8,021 0 6	2,705 19 10
1894 .....	587 4 4	.....	93,715 10 0	245 3 1	93,470 6 11	7,643 13 6	3,790 19 11
To June, 1895 (6 months) .....	213 7 2	3,800 7 7	43,431 13 9	194 10 7	43,237 3 2	7,227 19 0	4,890 11 7
To June, 1896 (12 months) .....	260 0 5	5,337 1 0	84,453 2 5	236 10 10	84,166 11 7	8,173 2 3	4,798 1 1

## MAINTENANCE.

## MANAGEMENT.

Year.	Maintenance of Sewers and S. W. Drains.	Wages and Expenses	Sewage Farm Maintenance.	Rents.	Total Maintenance.	President and Board Fees.	Salaries.	Stationery and Printing.	Advertising and Incidentals.	Total Management.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1890 .....	427 16 0	9,062 16 3	018 2 10	1,041 13 4	11,450 8 5	1,427 2 6	7,796 17 0	1,110 6 3	464 10 7	10,799 5 4
1891 .....	1,109 19 7	12,684 8 9	820 18 7	1,000 0 0	15,624 6 11	1,242 10 0	7,180 7 6	889 7 8	475 2 9	9,787 7 11
1892 .....	908 1 5	13,584 17 4	887 17 1	1,002 0 0	16,382 15 10	1,041 18 8	8,533 13 5	611 18 6	735 2 4	10,922 12 11
1893 .....	511 14 6	15,055 14 6	908 8 2	1,000 13 6	17,605 10 8	859 3 4	7,270 14 11	550 4 1	806 14 3	9,486 16 7
1894 .....	416 11 11	15,764 16 11	890 18 9	1,116 3 0	18,188 10 7	847 10 0	7,428 3 3	653 1 9	930 16 2	9,864 11 2
To June, 1895 (6 months) .....	342 13 7	7,660 3 7	*04 0 6	559 2 6	8,626 0 2	437 10 0	3,927 2	410 2 10	849 10 0	5,624 7 0
To June, 1896 (12 months) .....	2,011 16 10	16,173 5 7	625 2 1	1,227 10 5	20,037 14 11	1,015 6 5	7,792 3 0	711 0 9	747 11 9	10,266 4 11

\* Farm leased during this period.

## GENERAL SUMMARY.

Year.	Revenue.	Total Maintenance.	Total Management.	Total Maintenance and Management.	Interest.		Total Interest.	Depreciation.	Total Expenses.
					On Loan Capital.	On Debentures.			
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1890 .....	81,700 11 0	11,450 8 5	10,799 5 4	22,249 13 9	36,141 10 1	3,635 0 0	44,776 10 1	.....	67,026 3 10
1891 .....	81,302 18 4	15,624 6 11	9,787 7 11	25,411 14 10	39,674 17 4	6,820 0 0	46,494 17 4	.....	71,906 12 2
1892 .....	87,926 18 10	16,832 15 10	10,922 12 11	27,754 8 9	45,196 10 0	6,820 0 0	52,016 10 0	220 12 10	76,543 0 7
1893 .....	93,661 2 10	17,605 10 8	9,486 16 7	27,092 7 3	50,863 12 4	6,820 0 0	57,683 12 4	588 15 11	85,862 15 6
1894 .....	93,134 8 8	18,188 10 7	9,864 11 2	28,053 1 9	53,821 12 7	6,820 0 0	60,641 12 7	541 10 10	89,236 14 2
To June, 1895 (6 months) .....	43,110 1 9	8,626 6 2	5,624 7 0	14,250 13 2	23,564 0 3	3,360 0 0	32,124 0 3	230 15 8	46,605 0 1
To June, 1896 (12 months) .....	85,485 14 5	20,037 14 11	10,266 4 11	30,303 19 10	60,453 15 11	6,970 0 0	67,423 15 11	1,016 3 0	98,749 18 9

## Analysis of Approximate Cost of Water Main Reticulation in the City of Sydney and Suburbs, and the Percentage of Revenue on Cost.

District.	1894.						
	Mileage of Mains.	Properties Liable.	Annual Revenue.	Annual Revenue per Mile.	Annual Revenue per Property.	Approximate Cost.	Per Cent. on Cost.
			£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Alexandria.....	8.70	2,598	1,786 0 0	205 6 0	0 13 9	6,755 0 0	26.4
Ashfield.....	33.73	4,013	3,661 0 0	103 11 7	0 18 3	31,173 0 0	11.7
Auburn.....	6.74	547	105 0 0	24 12 7	0 6 0	3,116 0 0	5.3
Balmain.....	32.22	7,115	6,238 0 0	193 12 0	0 17 6	33,828 0 0	18.4
Botany.....	5.02	504	672 0 0	153 15 7	1 0 8	4,080 0 0	16.5
Burwood.....	22.60	1,852	2,280 0 0	100 18 0	1 4 7	20,311 18 0	11.2
Campbelltown.....	5.21	238	396 0 0	76 0 0	1 3 3	4,320 0 0	9.1
Camperdown.....	10.00	1,684	1,502 0 0	150 4 0	0 16 6	9,047 0 0	16.6
Canterbury.....	6.86	718	257 0 0	37 9 3	0 7 3	4,734 0 0	5.4
City of Sydney.....	147.26	23,133	69,593 0 0	472 12 0	3 0 2	145,311 0 0	47.8
Concord.....	12.50	736	637 0 0	50 19 2	0 17 6	9,861 0 0	6.4
Darlington.....	3.20	752	833 0 0	260 6 3	1 2 2	1,887 0 0	44.1
Drummoyne.....	7.35	990	516 0 0	70 4 1	0 10 5	5,694 0 0	9.0
Enfield.....	7.50	625	402 0 0	53 12 0	0 12 10	4,931 0 0	8.1
Five Dock.....	7.53	291	310 0 0	41 3 4	1 1 4	9,268 0 0	3.3
Glebe.....	22.13	4,058	4,685 0 0	211 14 0	1 3 1	16,883 0 0	27.7
Granville.....	17.32	1,784	1,288 0 0	74 7 3	0 14 4	17,473 0 0	7.3
Hunter's Hill.....	9.76	625	1,215 0 0	124 9 9	1 18 10	8,185 0 0	13.6
Hurstville.....	16.88	1,541	690 0 0	40 17 6	0 9 0	10,566 0 0	6.5
The Islands.....	1.10	23	717 0 0	651 16 4	31 3 6	3,000 0 0	23.9
Kogarah.....	9.60	1,091	490 0 0	51 0 10	0 9 0	7,034 0 0	6.9
Leichhardt and Annandale.....	42.05	6,285	4,090 0 0	97 5 3	0 13 0	35,753 0 0	11.4
Liverpool.....	13.11	534	942 0 0	71 18 0	1 12 5	10,413 0 0	9.0
Macdonaldtown (now Erskineville) ..	5.41	1,424	973 0 0	180 3 0	0 13 8	4,263 0 0	22.8
Marrickville.....	32.33	4,270	3,766 0 0	116 11 10	0 17 7	29,236 0 0	12.3
Mosman.....	10.0	862	567 0 0	56 14 0	0 13 2	8,107 0 0	7.0
Newtown.....	26.23	4,659	4,770 0 0	18 2 8	1 0 6	27,111 0 0	17.5
North Botany.....	8.55	881	335 0 0	39 0 0	0 7 7	3,514 0 0	9.5
North Sydney.....	31.00	4,372	5,473 0 0	176 11 0	1 2 6	31,020 0 0	17.6
Paddington.....	28.20	4,310	5,272 0 0	186 19 0	1 4 5	27,277 0 0	19.0
Petersham.....	24.23	3,206	3,344 0 0	137 14 6	1 0 10	20,854 0 0	16.0
Prospect and Sherwood.....	1.44	123	84 0 0	58 6 8	0 13 0	1,650 0 0	5.0
Parramatta.....	.50	20	8 0 0	16 0 0	0 8 0	850 0 0	.9
Randwick.....	30.03	1,947	2,716 0 0	90 16 0	1 7 10	20,787 0 0	13.0
Redfern.....	24.40	4,808	9,461 0 0	387 15 0	1 19 4	22,777 0 0	41.5
Rockdale.....	24.00	2,543	1,283 0 0	53 9 0	0 10 1	18,286 0 0	7.0
Rookwood and Silver Water.....	4.65	438	604 0 0	121 6 0	1 13 2	4,173 0 0	13.5
Ryde.....	6.61	439	528 0 0	80 0 0	1 4 0	5,070 0 0	10.4
Richmond.....	10.57	177	431 0 0	40 15 6	2 8 8	6,400 0 0	6.7
St. Peters.....	10.14	1,657	930 0 0	91 14 3	0 11 2	9,207 0 0	10.1
Strathfield and Flemington.....	12.65	1,137	1,266 0 0	100 1 6	1 2 3	11,636 0 0	10.8
Waterloo.....	12.40	2,362	2,281 0 0	183 19 0	0 19 4	11,708 0 0	20.5
Waverley.....	20.48	2,932	3,144 0 0	153 9 9	1 1 5	16,352 0 0	19.2
Willoughby.....	15.04	1,060	826 0 0	55 1 4	0 15 7	9,705 0 0	8.5
Woollahra.....	27.24	2,797	4,293 0 0	157 12 0	1 10 8	19,646 10 0	21.8
<b>Totals.....</b>	<b>814.52</b>	<b>108,717</b>	<b>155,720 0 0</b>	<b>191 3 8</b>	<b>1 8 7</b>	<b>711,702 8 0</b>	<b>21.8</b>

ANALYSIS of Approximate Cost of Water Main Retiulation in the City of Sydney and Suburbs and the Percentage of Revenue on Cost.

District.	30th June, 1896.							Per Cent. on Cost.
	Mileage of Mains.	Properties Liab.	Annual Revenue.	Annual Revenue per Mile.	Annual Revenue per Property.	Approximate Cost.		
			£ s. d.	£ s. d.	£ s. d.	£ s. d.		
Alexandria .....	11.34	2,695	2,153 0 0	189 17 0	0 15 2	11,455 0 0	18.7	
Annandale .....	9.5	2,255	1,650 0 0	173 13 8	0 14 7	6,700 0 0	24.3	
Ashfield .....	35.2	3,960	4,200 0 0	121 17 6	1 1 8	32,000 0 0	13.4	
Auburn .....	9.5	819	319 0 0	33 11 6	0 7 9	4,650 0 0	6.8	
Balmain .....	32.2	7,263	6,626 0 0	205 15 6	0 18 3	35,500 0 0	18.66	
Botany .....	5.4	659	850 0 0	159 5 2	1 6 0	4,300 0 0	20.00	
Burwood .....	23.1	1,901	3,201 0 0	138 11 5	1 13 8	20,570 0 0	15.5	
Campbelltown .....	5.3	241	389 0 0	73 8 0	1 12 3	4,394 0 0	8.6	
Camperdown .....	10.03	1,712	1,828 0 0	182 5 0	1 1 4	9,069 0 0	20.1	
Canterbury .....	10.7	919	421 0 0	49 0 0	0 9 1	7,300 0 0	5.76	
City of Sydney .....	155.04	23,796	74,752 0 0	482 2 11	3 2 9	153,300 0 0	48.76	
Concord .....	12.9	926	1,175 0 0	91 1 8	1 5 4	10,000 0 0	11.75	
Darlington .....	3.5	757	879 0 0	251 3 2	1 3 2	2,200 0 0	39.9	
Drummoyne .....	8.5	1,132	636 0 0	74 16 6	0 11 3	6,450 0 0	9.9	
Enfield .....	8.6	717	559 0 0	63 16 9	0 15 7	2,500 0 0	22.36	
Erskineville .....	5.7	1,459	1,168 0 0	205 0 0	0 16 0	4,390 0 0	26.6	
Five Dock .....	9.6	469	367 0 0	38 4 7	0 15 8	10,450 0 0	3.5	
Globe .....	22.4	4,121	5,123 0 0	228 14 1	1 4 10	17,950 0 0	30.00	
Granville .....	19.3	1,805	1,422 0 0	73 13 6	0 15 9	18,810 0 0	7.5	
Hunter's Hill .....	10.5	684	1,478 0 0	140 15 3	2 3 2	8,780 0 0	16.8	
Hurstville .....	24.3	2,102	960 0 0	39 10 1	0 9 1	15,060 0 0	6.3	
The Islands .....	1.10	23	885 0 0	804 10 10	38 9 7	3,000 0 0	29.5	
Kogarah .....	13.7	1,006	723 0 0	52 15 5	0 14 4	12,000 0 0	6.0	
Lane Cove .....	8.85	496	366 0 0	41 7 1	0 15 0	5,000 0 0	7.3	
Leichhardt .....	32.75	4,703	3,058 0 0	93 8 1	0 13 0	29,000 0 0	10.5	
Liverpool .....	13.12	664	977 0 0	74 9 3	1 9 4	10,500 0 0	9.3	
Marrickville .....	34.8	4,517	4,594 0 0	132 0 2	1 0 7	32,100 0 0	14.3	
Mosman .....	12.4	1,202	939 0 0	75 14 6	0 15 8	9,600 0 0	9.7	
Newtown .....	26.38	5,239	5,299 0 0	200 17 5	1 0 2	27,170 0 0	19.5	
North Botany .....	8.6	915	481 0 0	55 18 7	0 9 1	3,560 0 0	13.5	
North Sydney .....	34.8	5,226	6,669 0 0	191 12 9	1 5 6	32,790 0 0	20.3	
Paddington .....	28.30	4,500	5,884 0 0	207 5 1	1 6 2	27,000 0 0	21.79	
Petersham .....	26.9	3,351	3,928 0 0	146 0 5	1 3 5	25,000 0 0	15.7	
Prospect and Sherwood .....	1.8	157	177 0 0	98 6 8	1 2 6	1,850 0 0	9.5	
Parramatta .....	.5	22	13 0 0	2 12 0	0 11 9	850 0 0	1.5	
Randwick .....	29.4	2,011	3,661 0 0	124 10 5	1 16 5	23,500 0 0	15.5	
Redfern .....	25.4	4,847	9,899 0 0	39 0 0	2 0 10	24,000 0 0	41.24	
Richmond .....	10.8	198	552 0 0	51 2 2	2 15 9	6,500 0 0	8.49	
Rockdale .....	25.0	2,569	1,689 0 0	67 11 2	0 13 2	20,000 0 0	8.4	
Rookwood and Silverwater .....	7.7	593	943 0 0	122 3 4	1 11 6	4,700 0 0	20.0	
Ryde .....	7.5	436	813 0 0	108 8 0	1 17 0	6,900 0 0	11.8	
St. Peters .....	10.4	1,741	1,045 0 0	100 9 7	0 12 0	9,350 0 0	11.17	
Strathfield and Flemington .....	14.3	1,288	1,879 0 0	131 8 0	1 9 2	12,600 0 0	14.9	
Smithfield and Fairfield .....	3.6	101	83 0 0	23 1 1	0 16 5	2,100 0 0	4.0	
Waterloo .....	13.5	2,424	2,460 0 0	182 4 5	1 0 3	13,400 0 0	18.4	
Waverley .....	21.7	3,075	3,605 0 0	166 2 7	1 3 5	18,600 0 0	19.3	
Willoughby .....	15.78	1,186	1,089 0 0	60 13 0	0 18 4	9,560 0 0	11.38	
Woollahra and Vaucluse .....	26.88	3,156	5,248 0 0	195 4 9	1 13 3	20,400 0 0	25.7	
Total .....	888.66	116,043	177,205 0 0	199 8 1	1 1 6	776,938 0 0	22.8	

## Approximate Mileage of the various sized Mains, City of Sydney and Suburbs, &c.

	3"	4"	5"	6"	8"	9"	10"	12"	16"	18"	20"	24"	Miles.
Alexandria .....	...	5.6	...	3.2	...	1.0	...	...	1.5	...	...	...	11.3
Annandale .....	...	7.1	...	.75	...	.7	...	.5	...	...	...	...	9.05
Ashfield .....	...	17.9	...	12.0	...	1.2	...	2.7	.25	...	...	...	34.05
Auburn .....	...	6.1	...	3.1	...	.2	...	...	...	...	...	...	9.4
Balmain .....	1.2	22.6	...	7.0	12.5	2.0	...	...	1.4	...	...	...	34.325
Botany .....	...	3.0	...	1.2	...	1.3	...	...	...	...	...	...	5.5
Burwood .....	...	13.2	...	6.4	...	2.2	...	1.25	...	...	...	...	23.05
Campbelltown .....	.017	2.2	...	3.1	...	...	...	...	...	...	...	...	5.317
Camperdown .....	.5	6.73	...	1.2	...	1.4	...	.2	...	...	...	...	10.03
Canterbury .....	...	6.2	...	4.4	...	...	...	...	...	...	...	...	10.6
City of Sydney .....	6.0	26.9	2.0	34.4	1.4	10.0	1.8	15.0	16.3	.75	4.0	1.75	120.30
Concord .....	...	7.14	...	3.8	...	.1	...	...	...	2.0	...	...	13.04
Darlington .....	.2	2.7	.4	.1	...	.1	...	...	...	...	...	...	3.5
Drummoyne .....	...	4.8	...	2.0	...	1.7	...	.1	...	...	...	...	8.6
Enfield .....	.1	6.7	...	1.23	...	.25	.05	...	...	...	...	...	8.33
Erskineville .....	...	4.2	...	.6	...	...	...	.7	...	...	...	...	5.5
Five Dock .....	...	4.5	...	1.6	...	1.3	...	1.3	.9	...	...	...	9.6
Glebe .....	3.0	11.71	...	5.5	...	2.4	...	...	...	...	...	...	22.61
Gordon .....	...	5.57	...	3.26	...	...	.97	...	...	...	...	...	18.53
Granville .....	...	14.9	...	4.4	...	...	...	...	2.6	...	...	...	21.9
Hunter's Hill .....	...	5.3	...	1.9	...	2.5	...	.8	1.6	...	...	...	12.1
Hurstville .....	...	18.0	...	6.25	...	...	...	...	...	...	...	...	24.25
The Islands .....	.3	.2	...	.6	...	...	...	...	...	...	...	...	1.1
Kogarah .....	...	7.67	...	4.87	...	1.5	...	.6	...	...	...	...	14.64
Lane Cove .....	...	8.16	...	.60	...	...	...	...	...	...	...	...	8.76
Leichhardt .....	...	25.1	...	5.35	...	.8	...	.25	1.5	...	...	...	33.00
Liverpool .....	...	4.9	...	3.3	...	4.0	...	...	.1	...	...	...	13.2
Marrickville .....	...	22.0	...	8.1	...	1.4	...	...	2.3	...	...	.7	34.5
Mosman .....	...	7.5	...	4.4	...	.5	...	...	...	...	...	...	12.4
Newtown .....	.3	17.5	...	5.8	...	2.6	...	.6	...	...	...	...	26.8
North Botany .....	...	2.7	...	4.5	...	1.2	...	.2	...	...	...	...	8.6
North Sydney .....	...	19.8	...	10.4	...	.7	.5	.5	1.5	...	...	...	33.4
Paddington .....	.3	11.3	.15	14.0	.8	.6	.1	.25	...	...	.5	.2	28.20
Petersham .....	...	15.8	...	7.0	...	.5	...	1.6	1.3	.7	.1	...	27.00
Prospect and Sherwood .....	...	.6	.3	.2	...	.5	...	...	.03	.2	...	...	1.83
Parramatta .....	...	...	...	...	...	.5	...	...	...	...	...	...	.5
Randwick .....	...	10.6	...	10.9	.3	1.1	.3	1.5	...	...	...	...	30.7
Redfern .....	1.0	13.0	...	6.2	.4	2.2	...	.9	1.6	.5	...	...	25.8
Richmond .....	7.95	2.06	...	.8	...	...	...	...	...	...	...	...	10.81
Rockdale .....	.10	14.24	...	5.15	...	2.74	...	2.7	...	...	...	...	24.93
Rookwood and Silverwater .....	...	4.3	...	2.14	...	...	...	1.2	...	...	...	...	7.64
Ryde .....	...	4.3	...	1.6	2	.5	...	.6	.25	...	...	...	7.45
St. Peters .....	...	6.65	...	1.5	...	1.25	...	1.0	...	...	...	...	10.40
Strathfield and Flemington .....	...	7.1	...	7.5	...	...	...	.3	...	...	...	...	14.9
Smithfield and Fairfield .....	...	3.5	...	...	...	...	...	...	...	...	...	...	3.5
Vaucluse .....	...	1.8	...	2.8	...	...	...	...	...	...	...	...	4.6
Waterloo .....	.05	8.3	...	3.25	...	...	...	...	...	.8	...	...	12.40
Waverley .....	...	14.35	...	4.87	...	.75	.42	.6	...	.5	...	...	21.49
Willoughby .....	...	9.22	...	4.86	...	...	.25	...	...	...	...	...	14.33
Woollahra .....	.25	11.74	...	7.3	...	2.4	.08	.18	...	...	1.0	...	22.95
Totals .....	21.267	463.44	2.85	235.38	3.225	54.92	13.20	35.53	33.13	5.45	6.3	1.95	376.712

The above does not include Trunk or Pumping Mains.

# Appendix.

RESULT of Analysis of the Sydney Water Supply ; by WILLIAM M. HAMLET, Government Analyst, Government Laboratory, Sydney.

Date of Analysis.	Description.	Expressed in Grains per Gallon.				Expressed in Parts per Million				Appearance in standard 2-foot Tube.	Poisonous metals.	General observations on character of water.
		Total Solid Residue dried at 290°	Chlorine as Chlorides.	Nitrogen as Nitrates and Nitrites.	Phosphates from animal impurity.	Free Ammonia.	Albuminoid Ammonia.	Oxygen absorbed in 15 min.	Oxygen absorbed in 3 hours.			
1895.												
16 January	Crown-street Reservoir	6.02	2.55	.00	.00	.05	.12	.27	.52	Clear and bright	None	The results, with the exception of the water from Crown-street Reservoir, are normal, and call for no special remarks. There is a trace of precipitated organic matter in suspension, which subsides in standing. This is so fine that it will have a tendency to choke up any ordinary domestic filter.
	Belmore-road, Randwick	6.30	2.55	.00	.00	.00	.09	.20	.52	do	do	
	Prospect Reservoir, near Inlet	6.30	2.55	.00	.00	.00	.05	.24	.50	do	do	
	Basin at head of canal	6.44	2.55	.00	.00	.00	.05	.24	.48	do	do	
18 February	Crown-street Reservoir	6.58	2.60	Trace	None	.04	.12	.35	.72	Clear	do	Maintains its usual standard of excellence.
	Belmore-road, Randwick	6.72	2.55	do	do	.00	.07	.35	.72	do	do	
	Prospect Reservoir, near Inlet	6.60	2.50	do	do	.01	.08	.42	.70	do	do	
	Basin at head of canal	6.70	2.50	do	do	.00	.07	.42	.93	do	do	
30 March	Crown-street Reservoir	6.02	2.50	do	do	.00	.05	.50	.75	do	do	These analyses disclose a water of undoubted organic purity, and fit for all domestic purpose
	Belmore-road, Randwick	6.10	2.50	do	do	.00	.03	.36	.75	do	do	
	Prospect Reservoir, near Inlet	6.16	2.45	do	do	.09	.68	.36	.75	do	do	
	Basin at head of canal	6.58	2.45	do	do	.00	.68	.36	.75	do	do	
25 April	Basin at head of canal	6.02	2.4	do	.00	.00	.06	.32	.64	do	do	There is no unusual feature in this month's analysis.
	Prospect Reservoir, near Inlet	6.58	2.4	do	.00	.00	.08	.32	.64	do	do	
	Crown-street Reservoir	6.16	2.4	do	.00	.00	.07	.32	.64	do	do	
	Belmore-road, Randwick	6.72	2.4	do	.00	.00	.06	.32	.64	do	do	
21 May	Crown-street Reservoir	6.3	2.4	do	None	.04	.06	.32	.72	do	do	The quality of the water during the month of April is quite up to the usual standard of excellence.
	Belmore-road, Randwick	6.3	2.4	do	do	.00	.06	.32	.70	do	do	
	Prospect Reservoir, near Inlet	6.02	2.4	do	do	.00	.06	.32	.72	do	do	
	Basin at head of canal	..	..	..	..	..	..	..	..	..	..	
25 June	Crown-street Reservoir	5.88	2.35	do	do	.00	.05	.30	.72	Clear and bright	do	The indications afforded by a chemical analysis of the Sydney water supply are those of a good potable water of a high standard of excellence.
	Belmore-road, Randwick	5.96	2.35	do	do	.00	.06	.30	.72	Some suspended matter	do	
	Prospect Reservoir, near Inlet	6.00	2.35	do	do	.00	.07	.30	.72	Clear and bright	do	
	Basin at head of canal	6.02	2.35	do	do	.00	.04	.30	.72	do	do	
17 July	Crown-street Reservoir	5.80	2.40	do	do	.00	.10	.21	.40	Clear	do	The results obtained on samples collected during a time of drought show the constancy of composition of the water, and its freedom from any serious impurity.
	Belmore-road, Randwick	6.30	2.40	do	do	.00	.08	.21	.40	Traces of suspended matter.	do	
	Prospect Reservoir, near Inlet	6.00	2.40	do	do	.00	.06	.15	.30	do	do	
	Basin at head of canal	5.80	2.40	do	do	.00	.06	.21	.40	do	do	
16 August	Crown-street Reservoir	5.88	2.4	do	do	.00	.10	.34	.73	Clear and bright	do	The results indicate that the water now being supplied to the City of Sydney is of a high degree of organic purity, and one fit for all household and drinking purposes.
	Belmore-road, Randwick	6.12	2.4	do	do	.00	.10	.34	.73	do	do	
	Prospect Reservoir, near Inlet	5.88	2.4	do	do	.00	.08	.34	.73	do	do	
	Basin at head of canal	6.44	2.4	do	do	.00	.08	.34	.73	do	do	

\* The water in the canal was shut off to allow of connection with Smithfield

RESULT of Analysis of the Sydney Water Supply; by WILLIAM M. HAMLET, Government Analyst, Government Laboratory, Sydney—continued.

Date of Analysis.	Description	Expressed in Grains per Gallon.				Expressed in Parts per Million.				Appearance in Standard 2-foot Tube.	Poisonous matter.	General observations on character of water.
		Total solid Residue, dried at 250°.	Chlorine as Chlorides.	Nitrogen as Nitrates and Nitrites.	Phosphates from animal impurity.	Free Ammonia.	Albuminoid Ammonia.	Oxygen absorbed in 15 min.	Oxygen absorbed in 3 hours.			
1895.												
17 September	Crown-street Reservoir	6.80	2.4	Trace.	None.	.00	.08	.32	.75	Clear and bright	None.	The chief interest in this month's results is the fact that the figures indicate the condition of the water during a period of severe drought.
	Post-office, Randwick	6.00	2.4	do	do	.00	.07	.32	.75	do	do	
	Prospect Reservoir, near Inlet	6.30	2.4	do	do	.00	.00	.35	.76	do	do	
	Basin at head of canal	5.58	2.4	do	do	.00	.09	.35	.76	do	do	
22 October	Crown-street Reservoir	5.46	2.35	do	do	None	.06	.32	.69	Clear	do	Maintains its high standard of excellence.
	Post-office, Randwick	5.46	2.35	do	do	do	.06	.32	.69	do	do	
	Prospect Reservoir, near Inlet	5.60	2.35	do	do	do	.00	.32	.69	do	do	
	Basin at head of canal	5.46	2.35	do	do	do	.08	.32	.69	do	do	
14 November	Crown-street Reservoir	5.77	2.3	do	do	.00	.00	.34	.70	do	do	Suitable for drinking and all domestic purposes.
	Post-office, Randwick	5.77	2.3	do	do	.00	.06	.34	.70	do	do	
	Prospect Reservoir, near Inlet	5.77	2.3	do	do	.00	.00	.32	.69	do	do	
	Basin at head of canal	5.77	2.3	do	do	.00	.06	.32	.69	do	do	
16 December	Crown-street Reservoir	6.02	2.35	do	do	.02	.08	.32	.70	Clear and bright	do	The quality of the Sydney water supply is that of a first-class drinking water, and may be used with safety in the unfiltered condition. There is, however, a little oxide of iron and organic vegetable matter which, after standing, is deposited on the sides and bottom of the containing vessel, but this may be very readily removed by filtering through a clean plug of cotton wool.
	Post-office, Randwick	6.30	2.35	do	do	.00	.07	.32	.70	do	do	
	Prospect Reservoir, near Inlet	6.58	2.35	do	do	.00	.10	.25	.74	do	do	
	Basin at head of canal	6.72	2.35	do	do	.00	.8	.35	.74	do	do	
1896.												
28 January	Crown-street Reservoir	6.02	2.4	do	do	.00	.08	.35	.76	Clear	do	The quality of the Sydney water supply is that of a first-class drinking water, and may be used with safety in the unfiltered condition. There is, however, a little oxide of iron and organic vegetable matter which, after standing, is deposited on the sides and bottom of the containing vessel, but this may be very readily removed by filtering through a clean plug of cotton wool.
	Randwick Post office	6.02	2.4	do	do	.00	.00	.35	.76	do	do	
	Prospect Reservoir, near Inlet	6.14	2.4	do	do	.00	.08	.35	.75	do	do	
	Basin at head of canal	6.16	2.4	do	do	.00	.00	.35	.75	do	do	
14 February	Crown-street Reservoir	6.02	2.45	do	None	.03	.10	.34	.76	do	do	Maintains its usual standard of excellence.
	Randwick Post-office	6.58	2.45	do	do	.00	.08	.33	.76	do	do	
	Prospect Reservoir, near Inlet	6.16	2.45	do	do	.00	.08	.35	.77	do	do	
	Basin at head of canal	6.30	2.45	do	do	.09	.10	.35	.77	do	do	
11 March	Crown-street Reservoir	6.15	2.4	do	do	.00	.08	.40	.83	Clear with minute traces of suspended matter.	do	These results maintain the ordinary good character of the Sydney water supply, namely, that of a good water, suitable for all drinking purposes.
	Randwick Post-office	6.58	2.4	do	do	.00	.00	.40	.80	do	do	
	Prospect Reservoir, near Inlet	6.02	2.4	do	do	.00	.00	.46	.90	do	do	
	Basin at head of canal	6.02	2.4	do	do	.00	.00	.46	.90	do	do	
14 April	Crown-street Reservoir	6.10	2.3	do	None	.03	.03	.30	.66	do	do	It maintains well its high standard of excellence.
	Service-tap, Randwick	5.90	2.3	do	do	.00	.03	.30	.66	do	do	
	Prospect Reservoir, near Inlet	6.00	2.3	do	do	.01	.06	.30	.66	do	do	
	Basin at head of canal	6.00	2.3	do	do	.01	.07	.30	.66	do	do	
May	Crown-street Reservoir	5.80	2.4	do	do	.02	.08	.32	.70	Clear	do	Maintains its high standard of excellence.
	Randwick Post-office	6.16	2.4	do	do	.00	.06	.32	.70	do	do	
	Prospect Reservoir, near Inlet	6.00	2.4	do	do	.05	.08	.32	.70	do	do	
	Basin at head of canal	6.00	2.4	do	do	.01	.07	.32	.70	do	do	
24 June	Crown-street Reservoir	6.58	2.4	do	do	.01	.09	.32	.64	do	do	Maintains its high standard of excellence.
	Randwick Post-office	6.44	2.4	do	do	.00	.10	.32	.64	do	do	
	Prospect Reservoir, near Inlet	6.02	2.4	do	do	.01	.08	.32	.64	do	do	
	Basin at head of canal	6.44	2.4	do	do	.01	.10	.32	.64	do	do	





## METROPOLITAN BOARD OF WATER SUPPLY AND SEWERAGE—SEWERAGE REVENUE ACCOUNT, 30TH JUNE, 1896

REVENUE.	For the period ending—		Total.	EXPENDITURE.	For the period ending—		Total.
	30th June, 1895. 6 months.	30th June, 1896. 12 months.			30th June, 1895. 6 months.	30th June, 1896. 12 months.	
	£ s. d.	£ s. d.	£ s. d.		£ s. d.	£ s. d.	£ s. d.
To Balance brought forward .....			44,749 13 5				
Sewerage rates .....	43,817 2 6	85,167 12 2		By General maintenance, working expenses, repairs, &c. ....	454 9 3	853 1 7	
Drainage rates .....	2,306 13 9	4,397 6 8		Maintenance of ventilating shafts .....		242 4 0	
Drainers' licenses .....	153 10 0	133 10 0		Maintenance of storm-water sewers .....		1,314 11 10	
Sale of plans .....	353 7 6	521 15 0		Wages .....	7,312 3 5	14,607 16 2	
Drainers and others—Accounts .....	7 0 10	12 11 3		Rent .....	559 2 6	1,227 10 5	
Rents receivable .....	264 5 0	465 16 4		Inlet and outlet house expenses, sewage farm ..	236 4 6	446 3 1	
Compulsory drainage .....	221 11 11	263 10 11		Maintenance of sewage farm .....	64 6 6	625 2 1	
Sale of By-Laws .....	0 5 0	0 6 6		Legal expenses .....		721 5 9	
Live stock sales account, sewage farm .....		0 19 6			8,626 6 2	20,037 14 11	28,664 1 1
Agistment, sewage farm .....		71 2 6					
Miscellaneous receipts .....		48 5 0					
	47,123 16 6	91,082 15 10					
Less—							
Discounts, rates cancelled, &c. as under .....	4,013 14 9	5,597 1 5		<i>Management.</i>			
	43,110 1 9	85,485 14 5	128,595 16 2	President's salary and Board fees .....	437 10 0	1,015 6 5	
				Salaries .....	3,927 4 2	7,792 3 0	
				Stationery and printing .....	410 2 10	711 0 9	
				Advertising and incidental expenses .....	849 10 0	747 14 9	
					5,624 7 0	10,266 4 11	15,890 11 11
<i>Summary.</i>				Depreciation .....	230 15 8	1,016 3 0	1,246 18 8
Discounts off rates .....	3,800 7 7	5,337 1 0		Interest on—			
Rates cancelled or removed .....	213 7 2	255 3 6		Debentures .....	3,560 0 0	6,970 0 0	10,530 0 0
Revenue refunded .....		4 16 11		Loan expenditure .....	28,564 0 3	60,458 15 11	89,022 16 2
	£4,013 14 9	5,597 1 5			46,605 9 1	98,748 18 9	145,354 7 10
				Balance .....			27,991 1 9
			£173,345 9 7				£173,345 9 7

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Sydney, 2nd September, 1896.

MELBOURNE GREEN,  
Accountant.



## The Medical Adviser's Report for the year 1895, and the half-year ending June 30th, 1896.

I HAVE the honor to inform you that notwithstanding the very severe and sudden extremes of temperature, and the deficient rainfall, the general health of the community, as shown by the death-rate for the year 1895, greatly improved, and the mortality from such diseases as typhoid fever, diphtheria, and phthisis decreased. The unparalleled extremes of heat experienced during the first quarter of the year 1896, and the still more scanty rainfall than during the corresponding quarter of the year 1895, proved potent factors of evil; and the death-rate for the half-year ending June 30th, 1896, was greater than that for the corresponding half-year of 1895. The efficiency of the working of the water supply and sewerage systems is greatly minimised by the absence of an efficient municipal control; and it is to be regretted that a short-sighted policy of retrenchment is allowed to discount the safety of the public, for the sanitary arrangements of a dwelling may be in good order while the surroundings are very dirty, and it is useless to provide houses with efficient sewerage and water systems unless these are supplemented by the general cleanliness of the dwellings themselves. The relation between filth and disease is not properly appreciated. The key-note has been given by Pettenkofer, who compares filth to gunpowder, for which disease is the spark. Proper and efficient municipal control will remove the gunpowder, but our most frantic efforts to beat off the spark will be vain unless the filth has been removed.

Keeping fowls and animals in close proximity to dwelling-houses is detrimental to health, especially when it is remembered that fowls suffer from a disease akin to diphtheria.

My investigation of the reported cases of zymotic disease has led me to view with alarm the extreme prevalence of the disease enteric fever among young children, and as this fever is not readily transmitted by school attendance, unless the sanitary condition of the school premises is at fault, I asked that the whole of the public schools might be thoroughly inspected and reported upon. This report is not yet complete, but has already revealed many existing sources of danger, which make one surprised that those in authority have for so long a time allowed masses of children to be exposed, quite unnecessarily, to the risk of drinking water stored in filthy tanks, and to the foul emanations of latrines destitute of proper sanitary fittings.

Enforced poverty has also, without doubt, fostered the spread of enteric fever. An insufficiency of proper food induces physical weakness, followed by an adynamic condition which predisposes to all diseases of an infectious nature.

The population of the metropolis during the year 1895 began to diminish, and the decrease for the first half-year of 1896 was considerable.

		1895.	1896.
City	...	103,870	100,000
Suburbs	...	319,730	308,000
Metropolis	...	423,600	408,500
Density per acre in city	...	46.6	44.4

The rainfall for the year 1895 showed a very marked decrease on the past three preceding years, and the dry season extended through the first quarter of the year 1896 up to the end of May, when several showers fell, while during the month of June, 1896, the rainfall was phenomenal, as much rain falling in one week as fell during the whole of the first quarter of the year 1896.

As the rainfall has a great bearing upon the public health the following table will be interesting:—

	1893.		1894.		1895.		1896.	
	inches.	days.	inches.	days.	inches.	days.	inches.	days.
Quarter ending March 31st	.....	...	17.25	61	16.20	59	9.97	43
Quarter ending June 30th	.....	...	6.63	38	5.12	41	18.70	34
Quarter ending Sept. 30th	.....	...	7.11	39	4.41	31	.....	...
Quarter ending Dec. 31st	.....	...	6.75	50	6.13	42	.....	...
	49.36	208	37.74	188	31.86	175	28.67	77

The temperature during the year 1895 was subject to sudden and severe extremes of heat and cold, more especially during the third quarter of the year, when 36.8° F., the lowest temperature for the year, was registered on July 9th; 83.8° F. on September 9th; and 43.9° F. on September 23rd; 49.8° F. the mean temperature for July, was the lowest known for thirty years, and 57.4° F. the mean temperature for August was the highest known during that month since the year 1864. The highest temperature registered during the year was 96.8° F. on December 16th, and the greatest range, 31° F., occurred on November 7th. The heat wave which began in December, 1895, continued through January of the succeeding year, the highest temperature, 108.5° F., ever known in our city, being registered on January 13th. The greatest range for the first half-year of 1896 was 32.2° F., which occurred on January 16th, when the temperature was 105.2° F., at mid-day, and 73° F. at night. On January 30th the temperature fell to 63° F. and rose again on February 1st to 98° F. On February 4th 58° F. were registered, on March 5th 80.5° F., and on March 31st 52.6° F. The heat wave continued during the first part of the second quarter of the year 1896, 83.9° F. being registered on April 8th, and no really cool weather prevailed until June, when 42.5° F. were registered on the 22nd of the month.

The

The total number of deaths registered for the Metropolis during 1895 was not so great as for the preceding year, but the extreme heat and the very dry weather which was experienced during the first half-year of 1896, made a material difference and greatly increased the death-rate.

	1894.	1895.
City ... ..	1,782	1,682
Suburbs ... ..	4,177	3,867
Metropolis ... ..	5,961	5,549
Rate per 10,000 of Population...	140·7	130·7

For the half-year ending June 30th :—

	1895.	1896.
City ... ..	802	838
Suburbs ... ..	1,887	1,981
Metropolis ... ..	2,689	2,819

The zymotic death-rate for the city at the end of the year 1894 was 3·6 per 10,000 of the population. At the end of January, 1895, it fell to 1·7, at the end of February to 1·5, at the end of March to ·7. It rose at the end of April to 1·1, falling again at the end of May to 1·0, and at the end of June to ·8. It did not vary again till the end of August, when it rose to 1·0, falling again at the end of September to ·4. The onset of the warm weather brought it to 1·0 at the end of October, and at the end of November to 1·5; the increase of typhoid fever and diarrhoea bringing it at the end of December to 2·4. The great heat and the virulence of the epidemic of typhoid fever caused this rate to rise at the end of January, 1896, to 2·5, from which it fell at the end of February to 1·2, and rose at the end of March to 2·2. It fell at the end of April to ·9, and although it rose again at the end of May to 1·3, it fell at the end of June to ·7. The suburban zymotic death-rate which was 2·3 at the end of December, 1894, rose to 2·7 at the end of January, 1895, and fell to 1·3 at the end of February, 1·2 at the end of March, 1·1 at the end of April. It rose to 1·2 at the end of May, falling to ·4 at the end of June, and rising to 1·0 at the end of July. At the end of August it fell to ·7, at the end of September to ·6, and at the end of October to ·5. It rose in November to 1·8, and at the end of December to 2·6. At the end of January, 1896, the rate fell to 2·3, at the end of February to 1·9, and at the end of March to 1·4. Owing to the prevalence of diphtheria and enteric fever it rose at the end of April to 1·6, but fell at the end of May to 1·5, and to 1·1 at the end of June.

The mortality from diarrhoea was somewhat in excess, during the year 1895, of that for the previous year, and during the first quarter of the year 1896 was very great, but diminished greatly during the second quarter. The essential cause of diarrhoea lies ordinarily in the superficial layers of the earth, where it is intimately associated with the life processes of some micro-organism not yet isolated (Ballard). Experimental observation has shown that the laying of sewers has the effect of materially altering the earth temperature, and as this temperature bears a strong relation to the disease, it is highly probable that the extension of the sewerage system will be productive of much good, and help to free our suburbs from this disease which has proved so disastrous in the past.

#### DEATHS from diarrhoea in the metropolis.

	1889.	1890.	1891.	1892.	1893.	1894.	1895.
Number of deaths ... ..	384	263	288	297	305	281	297
Rate per 10,000 of the population ... ..	10·9	7·1	7·3	7·3	7·4	6·6	7·0

For the half-year ending June 30th.

	1895.	1896.
City ... ..	39	43
Suburbs ... ..	120	143
Metropolis ... ..	159	186

The increase for 1896 occurred during the phenomenally hot and dry first quarter of the year.

The peculiarity of the distribution of diphtheria "suggests," says Mr. Longstaff, "That its cause should not be sought for primarily in any high development of civilization such as sewers, but rather in some condition associated with a more primitive form of life." The disease is very frequently sporadic, and may occur in dwellings possessing all modern sanitary improvements. The mortality from this disease has shown a gradual decrease which has been very marked during the year 1895, as only 16 deaths were registered for the city, and 88 for the metropolis:—

	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
Number of deaths ... ..	138	188	149	179	120	128	134	88
Rate per 10,000 of the population ... ..	4·1	5·2	4·62	4·5	2·9	3·1	3·1	2·7

#### MORTALITY from diphtheria, half-year ending June 30th.

	1895.	1896.
City ... ..	6	4
Suburbs ... ..	48	49
Metropolis ... ..	54	53

Phthisis,

Phthisis, which is now recognised as a micro-parasitic disease, intimately connected with the dampness of the soil, and of an infectious nature capable of being transmitted by means of a specific virus or microbe, has proved less and less fatal since the installation of the present system of water supply and sewerage. The following table shows the saving of life through the reduction in the mortality from phthisis after the establishment of sanitary works. The reduction is per 10,000 of the population:—

Salisbury	...	...	...	...	from 44·13 to 22·23
Ely	...	...	...	...	from 32·0 to 16·0
Banbury	...	...	...	...	from 26·23 to 15·35
Sydney, N.S.W.	...	...	...	...	from 20·5 to 10·5

## DEATHS from Phthisis.

Year	...	...	Rate per 10,000 of the Population.							
			1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
Rate	...	...	16·8	14·1	14·7	14·3	12·0	11·6	13·7	10·5

## DEATHS for the half-year ending June 30.

					1895.	1896.
City	...	...	...	...	95	70
Suburbs	...	...	...	...	180	117
Metropolis	...	...	...	...	275	187

The mortality from Enterica or Typhoid Fever was considerably less during the year 1895 than during the year 1894.

## DEATHS from Enterica.

				1894.	1895.	1896.
Quarter ending March 31	...	...	...	50	32	57
" " June 30	...	...	...	26	19	45
" " September 30	...	...	...	14	6	...
" " December 31	...	...	...	33	24	...
Years' total	...	...	...	123	81	...

Of the 81 deaths registered in the year 1895 20 were reported from the city itself, and in very many of these 20 cases the disease originated outside the city boundary.

## DEATHS in the Metropolis from Enterica.

	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
Number of Deaths	148	209	143	109	80	74	123	81
Rate per 10,000 of the Population	5·5	5·9	3·8	2·7	1·9	1·8	2·8	1·9

## DEATHS from Enterica—City of Sydney only.

Year.	Population.	No. of Deaths.	Rate per 10,000.
1883	112,980	77	6·82
1884	118,645	100	8·43
1885	122,175	93	7·61
1886	123,645	62	5·58
1887	122,770	46	3·75
1888	119,590	50	4·18
1889	116,490	59	5·07
1890	113,470	43	3·79
1891	109,090	29	2·66
1892	107,730	19	1·76
1893	106,380	15	1·41
1894	104,880	42	4·06
1895	103,870	20	1·92

The disastrous and fatal epidemic which became so virulent during the first quarter of the year, 1896, maintained its position during the first portion of the second quarter of the same year.

## DEATHS from Enterica, half-year ending June 30.

			1894.	1895.	1896.
City	...	...	...	8	31
Suburbs	...	...	...	43	71
Metropolis	...	...	76	51	102

The

The cost of such a virulent epidemic to the community is not lightly to be passed over, and it would be well if those who would lessen the efficiency of municipal control through a short-sighted policy of retrenchment, would consider the following table, and appreciate the fact that the typhoid epidemic of 1896 approximately cost the community in valuable lives the sum of £14,000. This calculation does not in any way take into consideration the loss through sickness only.

DISTRIBUTION of Deaths from Enterica for the half-year ending June 30th, 1896, according to age, in the Metropolis.

Under 5 years.	5 to 9 years.	10 to 20 years.	21 to 30 years.	31 to 40 years.	41 to 50 years.	53 years.	54 years.	56 years.	76 years.
3	10	24	27	26	7	1	1	1	1

The maintenance of a water supply in a pure state is not of itself enough to eliminate typhoid fever. The local hygienic conditions must be good as well, otherwise the resisting powers of the human organism will be lowered and less unable to oppose the invading germs which may come from some other source. I have before now advanced the opinion that this disease is in some way connected with soil, and although defective drainage tends to promote the spread of enterica, still it is often difficult to dissociate its influence from that of co-existent hygienic defects, such as a want of personal cleanliness and impurity of the soil. I am supported in this opinion by Sir Charles Cameron, of Dublin, who in his last communication to me says:—"Typhoid fever owes its spread not altogether to excessive defects in the drainage system of houses, or to any impurities of the water supply. I am convinced that it is a soil disease, and that it resembles in its mode of propagation malarial diseases. A filth-laden soil is a good virus for the bacilli of typhoid fever, and just in proportion as we preserve our soils from human excreta may we expect a diminution of the amount of typhoid fever.

For the year 1895 381 cases of enterica were reported to the Board as against 542 cases in the year 1894.

	1894.	1895.	1896.
For the quarter ending March 31st ...	214	176	253
" " June 30th ...	168	87	216
" " September 30th	27	30	.....
" " December 31st	133	88	.....
	<u>542</u>	<u>381</u>	.....

Many of the dwellings have been reported year after year, and as some of them have only recently been provided with a proper system of sanitation, the vitiated dwelling and soil still remain to be purified by time, and at present are always ready to regenerate their long time inhabitant, the germ of typhoid fever. During the year 1895 15 cases were reported independently by various medical practitioners, but as most of the cases so reported were sent to the different hospitals they appear under those headings. This form of notification should be encouraged by the payment of a small fee by the central health authority.

During the year 1895, 367 cases of typhoid fever were admitted into the various hospitals:—

Hospital.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Prince Alfred ...	35	36	19	22	11	6	1	2	4	2	13	18	169
Sydney ...	6	7	6	5	4	2	2	2	6	5	4	12	61
Coast ...	19	15	14	6	1	2	0	6	3	6	9	11	92
St. Vincent's ...	4	1	0	3	2	1	0	0	0	1	0	3	15
Children's ...	6	5	4	6	2	2	1	1	2	0	0	1	30
	<u>70</u>	<u>54</u>	<u>43</u>	<u>42</u>	<u>20</u>	<u>13</u>	<u>4</u>	<u>11</u>	<u>15</u>	<u>14</u>	<u>26</u>	<u>45</u>	<u>367</u>

During the half-year ending June 30th, 1896, 469 cases of typhoid fever were reported to the Board. Of these, 428 were admitted into the various hospitals, 2 were reported by private practitioners, and 39 were reported through making application to the Government Statistician for information concerning registered deaths:—

Hospital.	Jan.	Feb.	March.	April.	May.	June.	Total.
Prince Alfred ...	17	24	28	13	23	11	116
Sydney ...	17	14	17	23	10	5	86
Coast ...	23	29	38	38	32	16	176
St. Vincent's ...	8	2	3	2	7	4	26
Children's ...	2	2	5	10	2	3	24
	<u>67</u>	<u>71</u>	<u>91</u>	<u>86</u>	<u>74</u>	<u>39</u>	<u>428</u>

Again it must be repeated that many of the dwellings had been reported during previous years, and many have only recently been provided with a proper system of sanitation. An

An investigation of the reported cases for the year 1895 was very carefully made by the Board's Inspectors, and it was found that only 69 of the 381 reported cases came from dwellings the sanitary fittings of which were in accordance with the By-laws of the Board.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
No sewers were available ... ..	54	35	34	26	5	13	0	4	8	8	13	20	220
Dwellings were in an insanitary state	7	8	9	5	3	7	3	3	4	3	4	15	71
No fixed abode ... ..	3	5	0	1	0	1	0	0	0	0	0	2	12
Contracted before coming into port...	0	0	0	0	0	0	1	0	2	2	2	2	9
Owners have complied with the regulations of the Board ... ..	6	10	5	10	12	4	0	4	1	2	7	8	69
Total ... ..	70	58	48	42	20	25	4	11	15	15	26	47	381

An analysis of the occupations of the aforesaid 69 persons shows—School children, 30; servants, 6; housewives, 9; milk-seller, 1; bricklayer, 1; clerks, 3; butcher, 1; tobacco-twister, 1; groom, 1; bootmakers, 3; artist, 1; painter, 1; greengrocer, 1; tailor, 1; architect, 1; hospital nurses, 2; labourers, 8; surveyor, 1; coachman, 1. Six of these cases were removed from one house where the surroundings were very filthy.

An investigation of the 469 cases reported during the first half-year of 1896 showed that 68 cases came from dwellings the owners of which had complied with the regulations of the Board, and an analysis of the occupations of these 68 persons shows—School children, 37; horse-trainer, 1; housewives, 2; blacksmith, 1; actor, 1; domestic servants, 5; bootmaker, 1; ironmonger, 1; cabman, 1; carpenters, 2; carter, 1; butcher, 1; clerk, 1; drapers, 2; constable, 1; fruiterer, 1; waiters, 2; cooper, 1; nurses, 2; painter, 1; labourer, 1; tailoress, 1.

	Jan.	Feb.	March.	April.	May.	June.	Total.
No sewers were available ... ..	45	52	65	50	40	24	276
Dwellings were in an insanitary state ... ..	16	10	20	24	21	9	100
Owners had complied with the regulations of the Board ... ..	11	8	11	15	17	6	68
No fixed abode ... ..	4	2	4	4	6	5	25
Total ... ..	76	72	100	93	84	44	469

Of the 367 cases admitted into the various hospitals in the year 1895, 28 proved fatal, that is 6·7 of the total number admitted. In the year 1894 it was 12 per cent.

Hospital.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Prince Alfred ... ..	2	1	0	2	0	0	0	0	0	0	0	1	6
Sydney ... ..	2	0	2	0	0	0	0	1	1	0	2	5	13
Coast ... ..	0	0	1	1	0	1	0	0	0	0	1	0	4
St. Vincent's ... ..	1	0	0	0	0	0	0	0	0	0	0	0	1
Children's ... ..	1	0	0	0	0	0	0	0	0	0	0	0	1
	6	1	3	3	0	1	0	1	1	0	3	6	25

An investigation of the dwellings from which these cases came shows that only 3 came from dwellings the owners of which had complied with the Board's regulations.

No sewers were available in ... ..	13 cases.
Dwellings were in an insanitary state in ... ..	9 "
Owners had complied with the regulations of the Board in ... ..	3 "
Total... ..	25 "

The mortality at the various hospitals from typhoid fever during the first half-year of 1896 was terrible, 63 out of the 428 cases admitted proving fatal, that is 12·14 per cent.

Hospital.	Jan.	Feb.	March.	April.	May.	June.	Total.
Prince Alfred ... ..	2	7	3	5	1	5	23
Sydney ... ..	3	3	5	4	2	1	18
St. Vincent's ... ..	3	1	1	0	3	0	8
Coast ... ..	1	4	2	1	3	2	13
Children's ... ..	0	0	0	0	0	1	1
	9	15	11	10	9	9	63

The percentage compared with the number of admissions is:—

Hospital.	Percentage of deaths.
Prince Alfred ... ..	9.5
Sydney ... ..	20.9
St. Vincent's... ..	30.7
Coast ... ..	7.8
Children's ... ..	4.1

Altogether, 102 deaths occurred in the metropolis from typhoid fever during the first half-year of 1896, and an inquiry into the sanitary surroundings of these cases showed—

	Jan.	Feb.	March.	April.	May.	June.	Total.
No sewers were available ... ..	13	15	13	12	9	12	74
Dwellings were in an unsanitary state ... ..	3	3	5	4	5	1	21
Owners had complied with the regulations of the Board ... ..	0	1	0	1	1	0	3
No fixed abode ... ..	1	1	2	0	0	0	4
	17	20	20	17	15	18	102

Of the 216 cases of typhoid fever reported during the first half-year of 1896, 153 were children under the age of 16 years.

From personal inquiry, I have found that not a single case of typhoid fever originated on premises the sanitary arrangements of which were in accordance with the By-laws of the Board.

It will be interesting to compare the death-rate from enteric fever in various cities of the world for the year 1894. The rate is per 10,000 of the population.

Edinburgh, 1.5; Glasgow, 2.6; Dublin, 4.8; Calcutta, 11.8; Paris, 2.9; St. Petersburg, 4.9; Berlin, 0.4; New York, 1.6; Sydney, 1.9; Melbourne, 3.02; Adelaide, 5.1; Hobart, 7.6; Perth, 13.3; Brisbane, 3.05.

From this it will be seen that our city holds a good sanitary position, and that although we may, owing to the exigencies of climate, be sometimes visited by a disastrous epidemic, the good effect of the Board's operations is very apparent.

I have, &c.,

THEO. MAILLER KENDALL,  
Medical Adviser.

To the Secretary, Water and Sewerage Board,  
Sydney, August 14th, 1896.

#### DISTRIBUTION of Reported Cases, 1895.

	Population.	Number of Cases.	Rate per 10,000.
Sydney ... ..	103,870	82	7.8
Suburbs.			
North-western... Balmain... ..	30,000	17	5.0
Leichhardt ... ..	13,022	33	25.0
Glebe ... ..	16,469	8	4.0
West Central ... Newtown ... ..	.....	45	...
Camperdown .. ..	6,750	13	19.0
McDonaldtown... ..	6,125	22	35.0
St. Peters ... ..	.....	12	...
East Central ... Redfern ... ..	24,776	13	5.0
Darlington ... ..	3,357	1	3.0
Waterloo ... ..	7,508	4	5.0
Alexandria ... ..	7,600	11	14.0
Botany ... ..	2,700	6	22.0
Eastern... .. Paddington ... ..	19,000	4	2.0
Randwick ... ..	6,350	2	3.0
Waverley ... ..	9,645	4	4.0
Woollahra ... ..	12,905	5	4.0
Western ... Ashfield... ..	12,875	8	6.0
Burwood ... ..	6,250	2	3.0
Five Dock ... ..	1,300	5	38.0
Drummoyne ... ..	.....	...	...
Marrickville ... ..	18,000	29	16.0
Petersham ... ..	12,830	13	10.0
Southern ... Canterbury ... ..	2,000	2	7.0
Hurstville ... ..	.....	...	...
Kogarah ... ..	.....	...	...
Rockdale ... ..	4,000	1	2.0
North Shore ... North Sydney and Willoughby..	20,000	4	2.0
Manly ... ..	.....	...	...
Ryde and Hunter's Hill ... ..	.....	12	...

DISTRIBUTION

## DISTRIBUTION of Reported Cases, Typhoid Fever, for first half-year, 1896.

	Population.	Cases reported.	Rate per 10,000.
City of Sydney ... ..	100,000	84	8.4
Suburbs—			
North-western—			
Balmain ... ..	30,000	25	8.3
Leichhardt ... ..	13,022	48	52.1
Annandale ... ..	3,300	30	47.1
Glebe... ..	16,469	14	8.5
West Central—			
Newtown ... ..	21,375	15	7.0
Camperdown... ..	6,750	5	7.3
Erskineville ... ..	6,125	5	8.0
St. Peter's ... ..	4,000	6	15.0
East Central—			
Redfern ... ..	24,375	35	12.5
Darlington ... ..	3,357	5	14.0
Waterloo ... ..	7,500	19	25.3
Alexandria ... ..	7,600	61	80.2
Botany ... ..	2,700	11	40.7
North Botany ... ..	4,068	16	39.3
Eastern—			
Paddington ... ..	19,000	13	6.8
Randwick ... ..	6,350	8	12.6
Woollahra ... ..	13,505	4	2.9
Waverley ... ..	9,645	1	1.0
Western—			
Ashfield ... ..	12,875	7	5.4
Burwood ... ..	6,250	5	8
Enfield ... ..	.....	1	...
Concord ... ..	.....	0	...
Strathfield ... ..	.....	1	...
Five Dock ... ..	.....	1	...
Drummoyne ... ..	.....	0	0
Marrickville ... ..	18,000	6	3.3
Petersham ... ..	12,830	11	8.5
Southern—			
Canterbury ... ..	2,600	2	7.6
Hurstville ... ..	.....	3	...
Kogarah ... ..	4,000	2	5.0
Rockdale ... ..	4,000	4	10.0
Northern—			
North Sydney ... ..	17,465	3	1.7
Willoughby ... ..	.....	0	...
Mosman ... ..	.....	0	...
Ryde ... ..	.....	2	...
Manly ... ..	.....	1	...
Hunter's Hill ... ..	.....	1	...
Beyond the Metropolis—			
Liverpool ... ..	.....	1	...
Rookwood ... ..	.....	1	...
Granville ... ..	.....	1	...
Canley Vale ... ..	.....	1	...
Newcastle ... ..	.....	1	...
Ships in harbour ... ..	.....	4	...

## The Health of the Board's Officers and Employees, 1895.

Sydney, 2 January, 1896.

SIXTY-NINE persons presented themselves for examination during the year. Fifteen were examined for certificates of fitness for employment; 1 of these was rejected.

Fifty-four were examined for sick leave—3 of these were ordered back to work, and 1 was reported as suffering through his own misconduct.

Of the remaining 50, 12 suffered from accident and 38 from general sickness.

Accidents caused sick leave to be granted for 118 days, 60 days of which were granted to one man who burnt his foot while at work.

General sickness caused sick leave to be granted for 382 days—100 days being granted to one man suffering from the sequela of influenza, 38 days to a man who contracted pneumonia, and 40 days to a man suffering from tumour in the abdomen.

The Board is again to be congratulated that no case of sickness reported can be traced to defective ventilation or attributed in any way to the sewers. The necessity of having good strong boots for the men cannot be too strongly emphasised, as in this way much of the rheumatism and catarrh would be prevented.

THEO. M. KENDALL,  
Medical Adviser.

The Secretary.

## The Health of Officers and Employees, Half-year ending 30th June, 1896.

Sir,

Sydney, 15 August, 1896.

I have the honor to report that the general health of the officers and employees of the Board for the first half-year of 1896 was good.

Twenty-six persons presented themselves to me for examination. Seven of these for certificates of health as to their fitness for the Board's employ. Two were ordered to return to work, and 2 were reported as having brought about their illness through their own fault.

Two hundred and sixty days' leave were recommended:—21 days to Inspector Lance, who died of cancer; 42 days to Inspector Alexander, who died of phthisis; 21 days to maintenance-man Morrison, who was in the Sydney Hospital suffering from obscure abdominal trouble; 21 days to cases of sunstroke which occurred at the beginning of the year; 42 days to Mr. Hewlett, of Waverley, who contracted typhoid fever; 42 days for cases of accident; and 7 days to Mr. Grain, who was operated upon for a tumour on the knee. The remaining 64 days were recommended for general ailments.

No case of disease came under my notice arising from any fault of the Board's sewers, and the health of the maintenance men, notwithstanding the severe heat of January and the virulent epidemic of typhoid fever, was extremely good.

I have, &c.,  
THEO. MAILLER KENDALL,  
Medical Adviser.

To the Secretary.

## Report of Assessor's Branch for the eighteen months ending 30th June, 1896.

Sydney, 9 September, 1896.

I HAVE the honor to submit a report on the work accomplished in this branch during the period ending June, 1896.

Reference has again to be made to the depreciation of property values, and, as a consequence, large reductions have been made by the City and Suburban Councils in their assessments, which have a corresponding effect on the Board's revenue. This was increased by the City Council making new assessments of all city properties for the year commencing January, 1896, which resulted in the ratable value within that area being reduced by a considerable amount. But notwithstanding this, and the still congested state of financial affairs, the amount of rates received may be considered a subject for satisfaction.

The following is a summary of the work transacted:—

### Rate Notices.

397,993 notices were served on ratepayers, including those for new mains, new sewers, and finals for payment of overdue rates.

### New Mains and New Sewers.

3,392 properties became liable for rating from new mains, and 1,556 from new sewers, making a total for the eighteen months 4,948.

### New Assessments.

3,235 assessments of new buildings, &c., were made, and building fees amounting to £3,078 3s. 3d. received.

### Summons Work.

35,514 final notices were served, and 5,619 summonses issued at the various Courts as under:—

Balmain Court	...	...	...	...	373
Campbelltown Court	...	...	...	...	15
Central Court	...	...	...	...	512
District Court	...	...	...	...	101
Glebe Court	...	...	...	...	554
Liverpool Court	...	...	...	...	74
Newtown Court	...	...	...	...	1,596
North Sydney Court	...	...	...	...	300
Paddington Court	...	...	...	...	526
Parramatta Court	...	...	...	...	181
Redfern Court	...	...	...	...	668
Ryde Court	...	...	...	...	53
Water Police Court	...	...	...	...	666
Total	...	...	...	...	5,619

### Properties rated to 30th June, 1896.

#### Water.

	Houses.	Vacant land.	Total.	Supplied with Water
City and Suburbs	91,867	23,004	114,871	84,497
Campbelltown	213	28	241	183
Liverpool	531	133	664	208
Richmond	198	...	198	198
Smithfield and Fairfield	88	13	101	60
Parish of Gordon	111	...	111	111

#### Sewerage.

City and Suburbs	42,275	3,267	45,542	Connected to Sewer. 39,540
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The Secretary.

H. J. BEAUMONT,  
Assessor.

ASSESSOR'S REPORT—continued.

SUMMARY of Properties Liable and Notices Delivered during 1895-6.

Ward or Borough.	No. of Properties Liable.									No. of Notices delivered during 18 months ending 30th June, 1896.												
	No. of Properties liable on 1st January, 1895.			New Buildings on Old Mains becoming liable during 18 months.		Properties becoming liable through new mains and sewers.		Total No. of Properties liable to 30th June, 1896.			Water, Sewerage, and Drainage Rates.	New Buildings on Old Mains and Sewers.	New Mains, including Notices to connect.	New Sewers, including Notices to connect.	Second Notices to Connect to Sewers.	Demand Notices for payment of Sewerage Expenses.	Stock Notices.	Garden Notices.	Special Fee Notices.	Final Notices.	Distress Notices.	Total.
	Water.	Sewerage.	Drainage.	Water.	Sewerage.	Water.	Sewerage.	Water.	Sewerage.	Drainage.												
Bourke Ward	1,174	1,127	..	24	16	..	..	1,198	1,143	..	3,569	24	..	..	..	..	30	6	63	386	..	4,078
Brisbane Ward	1,398	1,200	..	15	6	..	..	1,353	1,206	..	4,065	15	..	..	..	..	39	2	51	438	1	4,001
Cook Ward	6,100	6,000	..	90	84	..	..	6,190	6,084	..	18,639	90	..	..	..	..	702	20	39	1,689	8	21,087
Denison Ward	4,318	3,623	5	53	39	..	94	4,371	3,756	5	13,178	53	..	159	..	1	405	4	35	1,090	2	14,933
Fitzroy Ward	3,700	3,434	..	66	53	..	30	3,756	3,517	..	10,168	66	..	58	..	..	235	61	21	979	2	11,574
Gipps Ward	1,892	1,754	..	18	13	..	7	1,910	1,774	..	5,793	18	..	14	..	..	51	6	16	749	7	6,654
Macquarie Ward.	2,341	2,058	..	31	17	..	..	2,372	2,075	..	6,598	31	..	..	..	..	107	3	63	752	3	7,657
Phillip Ward	2,577	2,482	..	69	63	..	..	2,646	2,495	..	7,701	69	..	..	..	..	283	6	32	780	5	8,936
Alexandria	2,017	1,265	539	66	10	12	167	2,095	1,461	539	8,150	66	20	234	24	8	314	12	9	1,060	5	9,902
Annandale	2,100	..	..	146	..	9	..	2,253	..	..	6,549	146	10	..	..	..	233	48	13	481	1	7,483
Ashfield	3,772	..	3,405	88	..	100	..	3,860	..	3,405	11,989	88	138	..	..	..	209	150	22	531	3	13,181
Auburn	594	..	..	40	..	245	..	819	..	..	1,084	40	307	..	..	..	25	4	..	287	1	2,708
Balmain	7,088	..	1,826	162	..	13	..	7,263	..	1,826	21,504	162	17	..	..	..	386	129	26	2,166	6	24,856
Bankstown	0	..	..	3	..	..	..	9	..	..	20	..	..	..	..	..	..	..	..	3	..	23
Botany	572	..	..	53	..	34	..	659	..	..	1,756	53	51	..	..	..	69	7	4	66	1	2,037
Burwood	1,854	..	..	38	..	9	..	1,901	..	..	5,601	38	15	..	..	..	208	100	13	668	3	6,636
Campbelltown	240	..	..	1	..	..	..	241	..	..	720	1	..	..	..	..	15	6	1	119	..	1,062
Camperdown	1,680	813	..	31	11	1	447	1,712	1,271	..	5,180	31	2	890	..	14	276	10	10	703	3	6,819
Canterbury	702	..	74	73	..	144	..	819	..	74	2,244	73	233	..	..	..	57	5	1	286	..	2,898
Concord	880	..	..	20	..	26	..	926	..	..	2,595	20	45	..	..	..	45	8	2	165	..	2,680
Darlington	750	738	..	7	6	..	..	757	744	..	2,274	7	..	..	..	..	93	2	5	113	1	2,500
Drummoyle	980	..	..	36	..	116	..	1,132	..	..	3,113	36	142	..	..	..	45	17	2	288	..	3,643
Enfield	616	..	215	16	..	85	..	717	..	215	2,000	16	134	..	..	..	72	11	..	212	1	2,526
Erskineville	1,450	440	892	8	4	1	..	1,459	444	892	4,576	8	2	..	..	7	143	7	10	505	..	6,253
Five Dock	291	..	..	3	..	185	..	469	..	..	1,006	3	265	..	..	..	27	2	1	131	1	1,436
Glebe	4,045	1,950	1,025	76	45	..	221	4,121	2,326	1,025	12,112	76	..	642	280	..	445	183	13	1,602	2	16,310
Gordon	..	..	..	..	..	111	..	111	..	..	..	..	111	..	..	..	..	..	..	..	..	111
Granville	1,096	..	..	28	..	81	..	1,806	..	..	6,112	28	136	..	..	..	73	9	1	473	1	6,823
Guildford	21	..	..	7	..	..	..	28	..	..	63	7	..	..	..	..	..	..	..	6	..	76
Homebush	300	..	..	6	..	24	..	330	..	..	931	6	28	..	..	..	12	..	1	11	..	989
Hoxton Park	1	..	..	..	..	..	..	1	..	..	3	..	..	..	..	..	..	..	..	..	..	3
Hunter's Hill	617	..	..	20	..	47	..	684	..	..	1,922	20	78	..	..	..	75	19	3	275	..	2,302
Hurstville	1,600	..	..	106	..	306	..	2,102	..	..	5,701	106	604	..	..	..	129	36	3	398	1	6,973
Islands	23	..	..	..	..	..	..	23	..	..	69	..	..	..	..	..	..	..	..	..	..	69
Kogarah	725	..	..	53	..	228	..	1,008	..	..	3,185	53	319	..	..	..	51	12	4	300	..	3,924
Lane Cove	408	..	..	15	..	75	..	499	..	..	886	13	96	..	..	..	22	5	..	10	..	1,032
Leichhardt	4,686	..	930	105	..	12	..	4,703	..	930	13,993	105	20	..	..	..	445	90	27	1,590	3	16,273
Liverpool	650	..	..	13	..	1	..	664	..	..	1,830	13	2	..	..	..	11	15	3	683	1	2,500
Marrickville	4,266	70	..	157	2	94	..	4,517	72	..	14,276	157	134	..	15	..	548	222	56	1,531	10	16,947
Mosman	783	..	..	119	..	300	..	1,202	..	..	3,017	119	349	..	..	..	30	63	..	295	..	3,879
Newtown	5,057	2,390	544	182	94	..	..	5,239	2,490	544	15,454	182	..	..	6	33	625	47	48	1,318	10	17,918
North Botany	873	3	..	41	..	1	..	915	3	..	2,022	41	2	..	..	..	115	10	3	122	1	2,910
North Sydney	4,850	..	519	143	..	233	..	5,236	..	519	14,940	143	313	..	..	..	293	255	21	1,488	4	17,457
Paddington	4,357	4,023	19	112	101	31	11	4,600	4,135	19	13,093	112	31	22	27	8	462	80	19	1,520	8	15,382
Parramatta	21	..	..	..	..	1	..	22	..	..	63	..	2	..	..	..	..	..	..	6	..	70
Petersham	3,150	377	1,819	162	39	39	116	3,351	532	1,819	9,041	162	60	199	47	..	257	214	25	1,103	2	11,700
Prospect & Sherwood.	119	..	..	3	..	35	..	157	..	..	391	3	63	..	..	..	6	..	6	30	..	498
Randwick	1,850	831	..	121	39	40	173	2,011	543	..	6,109	121	51	305	116	..	229	130	9	906	13	7,938
Redfern	4,783	4,159	..	64	52	..	2	4,847	4,213	..	14,425	64	..	4	12	3	435	23	42	1,753	7	16,773
Rockdale	2,304	..	..	72	..	133	..	2,569	..	..	7,580	72	233	..	..	..	187	85	3	740	2	8,908
Rookwood	305	..	..	33	..	56	..	438	..	..	1,315	33	95	..	..	..	69	2	..	153	..	1,672
Ryde	420	..	..	6	..	10	..	436	..	..	1,348	6	12	..	..	..	47	2	..	179	1	1,593
Silver Water	120	..	..	19	..	..	..	139	..	..	350	19	..	..	..	..	9	..	..	12	..	396
Smithfield and Fairfield.	..	..	..	13	..	88	..	101	..	..	217	13	175	..	..	..	2	..	..	52	..	459
St. Peters	1,669	..	..	39	..	33	..	1,741	..	..	5,209	39	51	..	..	..	303	7	7	440	4	6,060
Strathfield	897	..	..	40	..	21	..	958	..	..	2,671	40	27	..	..	..	37	00	1	317	1	3,154
Vaucluse	250	..	..	5	..	2	..	257	..	..	490	5	3	..	..	..	15	10	..	37	..	530
Waterloo	2,371	1,861	..	52	19	1	79	2,424	1,959	..	7,023	52	2	126	2	18	334	16	11	1,062	6	8,652
Waverley	2,900	1,183	..	60	25	25	88	3,075	1,296	..	9,109	60	39	164	63	..	344	176	10	930	4	10,899
Willoughby	762	..	..	120	..	294	..	1,186	..	..	1,632	120	390	..	..	..	89	12	..	304	4	2,517
Woollahra	2,813	1,872	..	86	70	..	11	2,899	1,953	..	8,400	86	..	21	..	..	310	102	7	898	..	9,899
Totals	100,363	43,109	11,812	3,235	817	3,392	1,656	116,000	45,542	11,812	337,278	8,235	4,563	2,835	502	92	10,150	2,626	706	36,514	139	397,938

HERBERT J. BEAUMONT,  
Assessor.

Ward or Borough.	Stock.						Gardens.						Special Fees.						
	1894.			1895-G.			1894.			1895-G.			1894.			1895-96.			
	No. of Stock Registered.	Amount of Fees Paid for the Year.	Amount Outstanding on 31st Dec., 1894.	No. of Stock Registered.	Amount of Fees Paid for 18 months.	Amount Outstanding on 30th June, 1895.	No. of Gardens Registered.	Amount of Fees Paid for the Year.	Amount Outstanding on 31st Dec., 1894.	No. of Gardens Registered.	Amount of Fees Paid for 18 months.	Amount Outstanding on 30th June, 1895.	No. of Special Fees Registered.	Amount of Fees Paid for the Year.	Amount Outstanding on 31st Dec., 1894.	No. of Special Fees Registered.	Amount of Fees paid for 18 months.	Amount Outstanding on 30th June, 1895.	
Bourke Ward	84	£ 8 7 8	£ 0 5 0	80	£ 2 6 6	£ 0 10 0	6	£ 2 17 6	£ 0 10 0	6	£ 5 1 8	£ 0 10 0	61	£ 50 2 0	£ 10 5 0	63	£ 80 6 9	£ 19 17 6	
Brisbane Ward	85	21 2 6	1 5 0	89	27 12 6	1 5 0	1	0 30 0	0 10 0	2	1 10 0	0 10 0	57	28 7 6	2 0 0	51	41 16 3	5 10 0	
Cock Ward	620	142 0 0	0 0 0	702	209 0 6	24 2 6	12	5 7 6	0 10 0	20	10 16 3	0 10 0	26	9 2 6	1 12 6	39	17 3 4	0 17 6	
Denison Ward	465	96 0 0	4 15 0	495	123 1 3	14 7 6	2	0 10 0	0 10 0	4	1 17 6	0 10 0	30	13 18 9	1 5 0	35	55 14 0	1 15 0	
Fitzroy Ward	257	58 15 0	4 15 0	235	68 15 0	13 10 0	66	41 7 6	1 15 0	61	59 0 0	3 10 0	11	11 16 0	1 16 0	21	11 17 6	0 15 0	
Gipps Ward	63	10 10 0	0 10 0	51	16 10 0	2 10 0	5	0 7 6	0 10 0	3	3 10 0	0 10 0	19	8 8 9	1 5 0	16	18 11 8	0 15 0	
Macquarie Ward	140	32 10 0	2 0 0	107	34 10 0	1 17 6	3	1 0 0	0 10 0	3	2 5 0	0 10 0	68	54 5 6	14 3 6	63	82 4 2	25 17 6	
Phillip Ward	248	57 7 6	1 10 0	283	85 3 9	9 15 0	3	1 0 0	0 10 0	6	4 12 6	0 10 0	25	0 5 0	0 17 6	32	21 7 6	1 5 0	
Alexandria	207	73 7 6	5 5 0	314	94 13 9	8 10 0	5	1 15 0	0 10 0	12	6 12 6	0 10 0	9	4 6 3	0 10 0	9	8 15 0	3 12 6	
Annandale	209	48 17 6	1 15 0	233	71 10 0	1 10 0	22	11 19 5	0 10 0	43	32 1 11	0 10 0	5	3 15 0	0 10 0	13	0 2 6	0 12 6	
Appin	250	60 18 9	3 12 6	209	82 1 3	5 15 0	126	60 16 3	1 15 0	150	117 14 5	4 9 6	14	3 15 0	0 10 0	22	8 3 9	1 12 6	
Ashfield	14	2 7 6	0 0 0	25	18 13 9	0 0 0	1	0 3 0	0 10 0	4	2 5 0	0 10 0	1	0 15 0	0 10 0	4	0 15 0	0 10 0	
Auburn	406	94 10 0	5 5 0	386	132 12 6	13 10 0	58	46 0 10	4 1 3	129	97 18 3	2 2 6	30	15 14 3	0 15 0	26	14 7 6	1 7 6	
Bankstown	67	14 7 6	0 7 6	60	23 6 3	1 2 6	2	1 0 0	0 10 0	7	3 18 9	0 10 0	3	2 0 0	0 10 0	4	3 7 6	0 10 0	
Botany	193	34 10 0	2 15 0	202	58 17 6	4 15 0	77	43 6 5	0 10 0	100	85 1 2	1 3 9	7	3 3 9	0 10 0	13	7 6 3	0 10 0	
Burwood	13	1 0 0	2 5 0	15	3 18 9	0 10 0	6	1 10 0	1 0 0	6	8 10 0	0 10 0	2	0 5 0	0 10 0	1	0 5 0	0 10 0	
Campbelltown	233	58 17 6	9 0 0	276	83 1 3	2 7 6	5	4 5 0	0 10 0	10	5 7 6	0 10 0	8	3 3 6	0 10 0	10	7 6 3	1 0 0	
Camperdown	29	5 12 6	0 2 6	67	13 10 9	2 8 9	7	0 2 6	0 10 0	5	3 0 0	0 10 0	2	0 10 0	0 10 0	1	0 2 6	0 15 0	
Canterbury	50	8 2 6	0 17 6	45	12 10 0	2 0 0	1	4 8 9	2 2 6	3	2 15 6	7 6 3	2	1 5 0	0 10 0	2	0 5 0	0 10 0	
Concord	103	23 10 0	0 15 0	94	29 3 9	3 0 0	9	5 5 0	0 10 0	17	16 17 6	0 10 0	2	0 10 0	0 10 0	2	0 6 6	0 10 0	
Darlington	45	7 2 6	1 5 0	42	13 11 3	1 8 3	9	3 3 2	0 10 0	11	6 2 1	0 10 0	1	0 10 0	0 10 0	1	0 2 6	0 10 0	
Drummoyne	57	10 10 0	1 10 0	75	17 3 9	6 7 6	8	1 16 3	0 10 0	7	5 1 3	0 5 0	8	1 15 0	0 6 0	10	2 7 6	0 10 0	
Enfield	120	27 7 6	1 5 0	143	40 18 9	2 7 6	4	0 15 0	0 10 0	2	1 12 6	0 10 0	1	0 5 9	0 10 0	1	6 2 6	0 10 0	
Erskineville	41	6 7 6	0 0 0	27	7 13 9	0 18 9	1	0 15 0	0 10 0	1	0 15 0	0 10 0	16	12 5 0	0 15 0	15	10 10 0	1 10 0	
Five Dock	494	112 17 6	11 10 0	445	133 10 0	17 7 6	100	49 18 9	2 17 6	133	97 18 2	4 7 6	1	0 5 0	0 10 0	1	0 7 6	0 10 0	
Glebe	68	13 4 2	1 19 0	73	20 11 3	3 16 3	7	2 12 6	0 10 0	9	4 15 0	1 7 6	1	0 5 0	0 10 0	1	0 7 6	0 10 0	
Gordon	10	0 15 0	0 10 0	12	2 13 9	0 13 9	1	0 10 0	0 10 0	1	0 10 0	0 10 0	3	0 10 0	0 10 0	3	3 6 0	0 5 0	
Granville	65	12 15 0	0 5 0	75	22 11 3	2 1 3	15	8 0 1	0 10 0	19	18 11 3	1 10 0	6	8 12 6	0 10 0	3	1 2 6	0 5 0	
Guildford	82	12 12 6	1 10 0	129	29 13 0	5 6 3	13	7 8 10	0 10 0	36	29 0 8	0 10 0	3	0 10 0	0 10 0	3	1 0 0	0 10 0	
Homebush	57	9 5 0	1 17 6	51	12 5 0	1 1 3	7	3 12 6	2 10 0	12	4 1 3	0 10 0	1	0 10 0	0 10 0	4	0 15 0	0 10 0	
Hoxton Park	22	4 3 9	0 13 9	22	4 3 9	0 13 9	5	4 9 6	0 10 0	5	4 9 6	0 10 0	23	9 5 0	0 10 0	27	16 8 9	1 0 0	
Hunter's Hill	401	93 0 0	2 2 6	445	136 0 0	4 15 0	60	25 17 6	3 10 0	90	60 11 8	2 17 6	3	0 7 6	0 10 0	3	3 18 9	0 2 6	
Hurstville	27	0 10 0	5 10 0	11	0 16 3	3 5 0	7	3 10 0	0 10 0	16	6 5 0	0 10 0	88	12 2 6	5 0 0	56	53 13 9	4 5 0	
Islands	513	102 7 6	17 7 6	548	155 0 0	12 11 3	141	74 19 6	2 17 6	222	105 2 8	4 2 6	63	47 9 6	2 4 3	49	23 11 3	2 0 0	
Kogarah	40	5 7 6	0 2 6	38	9 12 6	0 7 6	14	13 3 3	1 7 6	47	34 10 8	1 10 0	34	13 7 6	2 15 0	3	3 0 0	0 10 0	
Lane Cove	542	125 2 6	6 7 6	625	192 17 6	17 5 0	39	18 12 6	1 7 6	10	7 10 0	0 10 0	15	2 5 9	0 10 0	21	23 12 6	0 16 0	
Leichhardt	115	22 2 6	0 0 0	116	86 3 4	0 12 6	5	2 10 0	0 10 0	255	108 7 3	4 0 0	14	6 0 4	2 7 3	19	12 11 0	0 10 0	
Liverpool	311	67 10 0	5 5 0	293	83 8 9	7 8 9	169	90 0 3	8 10 0	80	62 1 11	4 5 0	17	6 17 6	0 7 6	23	11 0 0	2 0 0	
Marrickville	413	95 2 6	8 7 6	462	134 0 0	15 10 0	62	37 3 9	0 10 0	214	166 8 0	4 12 6	7	3 2 6	0 10 0	9	2 0 0	0 5 0	
Mosman	12	2 5 0	0 2 6	6	1 7 6	0 15 0	1	0 10 0	0 10 0	130	111 9 8	13 10 6	30	18 9 0	0 10 0	42	33 2 6	3 0 0	
Newtown	107	35 17 6	3 5 0	229	59 15 0	10 15 0	106	61 10 1	3 12 6	28	18 15 8	0 10 0	4	0 15 0	0 10 0	3	1 0 0	0 10 0	
North Botany	611	121 2 6	2 2 6	435	164 2 0	19 7 6	25	10 10 0	0 10 0	85	70 14 11	61 2 6	1	0 2 6	0 10 0	2	0 10 0	0 10 0	
North Sydney	152	25 5 0	0 15 0	187	49 16 8	3 11 3	48	27 13 10	0 10 0	2	0 15 0	0 10 0	1	0 2 6	0 10 0	1	0 10 0	0 10 0	
Paddington	16	2 10 0	0 2 6	69	3 15 0	21 2 6	1	0 10 0	0 10 0	2	2 5 0	0 10 0	1	0 2 6	0 10 0	1	0 10 0	0 10 0	
Parramatta	107	16 12 6	0 15 0	47	14 7 6	1 1 3	2	1 5 0	0 10 0	2	2 5 0	0 10 0	1	0 2 6	0 10 0	1	0 10 0	0 10 0	
Petersham	13	2 2 6	0 17 6	9	2 2 6	0 10 0	1	0 10 0	0 10 0	1	0 10 0	0 10 0	1	0 2 6	0 10 0	1	0 10 0	0 10 0	
Prospect and Sherwood	252	56 10 0	1 5 0	303	95 12 0	2 11 9	6	2 10 0	0 10 0	7	5 17 6	0 10 0	4	0 10 0	0 10 0	7	8 0 0	0 10 0	
Randwick	30	6 7 6	0 12 6	37	9 1 9	2 19 6	45	38 6 4	0 17 6	60	73 14 8	2 6 3	1	0 2 9	0 10 0	1	5 2 3	0 2 9	
Redfern	16	2 10 0	0 2 6	69	3 15 0	21 2 6	1	0 10 0	0 10 0	10	7 0 0	1 2 6	2	0 10 0	0 10 0	2	0 10 0	0 10 0	
Rockdale	368	78 13 4	4 2 6	334	190 1 3	14 5 0	15	6 12 6	0 5 0	16	10 18 9	0 10 0	9	2 10 0	0 10 0	11	7 0 0	0 10 0	
Rockwood	247	59 16 3	2 5 0	344	93 11 3	17 7 6	137	68 5 8	3 2 6	176	134 0 11	6 16 3	3	1 9 6	0 10 0	10	6 12 6	0 10 0	
Ryde	122	18 2 6	2 2 6	80	11 18 9	1 13 9	6	1 19 5	0 10 0	12	4 5 9	0 10 0	15	11 0 0	0 10 0	7	8 3 9	10 15 0	
Silver Water	280	60 10 0	7 7 6	310	92 13 9	13 5 0	148	95 13 2	3 10 0	162	144 4 2	7 0 0	15	11 0 0	0 10 0	7	8 3 9	10 15 0	
Smithfield and Fairfield																			
St. Peter's																			
Strathfield																			
Vaucluse																			
Waterloo																			
Waverley																			
Willoughby																			
Woolfahra																			

ASSESSOR'S REPORT—continued.

SUMMARY of Rates, Fees, &c., for Water.

Ward or Borough.	No. of Properties liable.	Water Rates.	Meter Accounts.	New Mains—broken periods.	New Buildings—broken periods.	Stock.	Gardens.	Special Fees.	Building Fees.	Revenue for 18 months ending 30th June, 1896.	Less Rates cancelled or removed.	Net Revenue.	Arrears from previous years.	Total Water Rates receivable to 30th June, 1896.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Bourke Ward	1,198	14,809 19 8	6,373 10 6		87 5 5	10 17 6	5 6 3	112 14 3	64 8 7	21,464 8 2	110 8 10	21,353 19 4	1,255 3 3	22,609 2 7
Brisbane Ward	1,353	10,108 10 6	2,551 2 10		183 15 9	80 10 0	1 10 0	48 3 0	9 8 6	12,938 1 4	22 9 11	12,910 11 5	1,601 11 4	14,502 2 9
Cook Ward	6,100	11,830 0 4	1,247 13 0		21 8 11	248 13 0	10 12 3	20 10 10	115 9 2	13,404 16 0	43 18 0	13,450 18 0	752 5 1	14,203 3 1
Denison Ward	4,371	10,293 17 1	9,178 12 1		34 0 0	146 13 9	1 17 6	60 0 6	65 5 0	19,775 11 11	58 6 8	19,717 5 8	1,807 3 0	21,524 8 8
Fitzroy Ward	8,756	10,478 7 2	1,227 17 5		37 15 6	85 15 0	63 16 3	12 7 6	147 2 4	12,048 1 2	21 1 11	12,026 19 3	474 11 1	12,501 10 4
Gipps Ward	1,910	6,205 1 11	2,685 5 6		53 10 1	19 11 3	4 0 0	19 14 2	13 2 11	9,001 5 10	27 0 10	8,974 5 0	937 19 4	9,912 4 4
Macquarie Ward	2,372	11,888 14 0	2,380 11 8		49 19 0	39 7 6	2 5 0	117 1 8	13 0 1	14,440 18 11	29 13 9	14,361 5 2	1,025 1 2	15,386 6 4
Phillip Ward	2,616	6,241 3 3	2,511 5 2		66 17 10	47 16 3	4 12 6	23 10 0	24 18 11	8,970 1 4	25 15 9	8,944 8 2	1,170 4 10	10,123 13 0
Alexandria	2,605	2,268 5 3	771 4 11	11 10 0	18 19 1	112 16 3	0 15 0	12 19 6	32 11 0	3,229 1 4	25 9 3	3,204 2 3	168 0 3	3,372 2 6
Amandale	2,256	1,993 3 11	197 16 3	0 8 6	34 3 9	77 5 0	24 10 8	10 9 0	128 0 9	2,475 8 10	15 5 5	2,460 3 5	145 14 6	2,605 17 11
Appin								2 10 0		0	0 5 0	2 5 0	1 0 0	3 5 0
Ashfield	3,960	5,279 0 10	796 15 3	10 11 10	34 16 9	93 11 3	128 17 2	11 1 3	113 0 8	6,434 15 11	48 11 8	6,386 4 3	317 6 0	6,803 10 3
Auburn	819	482 15 9	26 4 0		30 4 3	6 13 9	2 11 3	0 15 0	21 19 0	478 12 9	5 9 5	473 3 4	104 16 1	577 19 5
Balmain	7,263	7,757 13 11	1,699 7 0	1 9 7	48 4 11	151 19 0	103 12 0	25 7 6	160 16 2	9,939 1 1	38 17 5	9,900 3 3	670 19 6	10,571 2 8
Bankstown	5	9 13 10	13 3 8		0 10 2					23 12 8		23 12 8	4 13 9	28 6 5
Botany	659	524 0 11	689 1 1	3 16 7	9 15 8	25 3 0	3 18 9	3 7 0	15 13 2	1,274 17 0	3 11 7	1,271 5 5	204 3 8	1,475 9 1
Burwood	1,901	3,382 17 5	1,155 14 3	1 13 1	13 17 9	66 7 6	89 16 2	7 11 3	77 10 0	4,900 17 0	18 17 11	4,786 19 1	248 15 4	5,035 14 5
Campbelltown	241	426 18 4	147 19 0		1 3 7	4 13 9	3 10 0	0 5 0	0 3 0	584 0 5	10 12 0	573 8 5	94 6 11	667 15 4
Camperdown	1,712	2,179 10 0	497 1 10	0 2 11	5 14 2	101 1 3	6 2 6	8 16 3	32 10 5	2,741 14 4	18 7 6	2,723 6 10	144 19 9	2,868 7 0
Canterbury	910	492 13 1	88 12 1	24 3 0	29 10 8	16 3 9	3 0 0	0 17 6	6 0 4	631 5 5	7 1 3	624 4 2	67 2 10	691 7 0
Concord	926	781 19 8	143 7 1	7 11 7	5 12 2	15 7 6	10 1 8	0 5 0	80 4 9	1,762 9 5	8 3 4	1,754 6 1	137 18 9	1,891 19 10
Darlington	767	1,127 15 5	99 4 2		1 6 3	33 8 9	1 7 6	1 10 0	4 1 9	1,318 14 3	2 14 1	1,316 0 2	66 12 8	1,382 12 10
Drummoyle	1,132	793 11 8	17 10 6	12 8 3	18 0 11	15 17 6	17 0 0	0 6 6	34 11 2	954 6 6	5 19 7	948 6 11	70 19 4	1,019 6 3
Enfield	717	612 14 11	190 5 4	14 19 2	5 13 8	23 13 9	7 17 6	0 2 6	12 0 5	837 12 3	3 19 0	833 13 3	72 2 3	905 15 11
Erskineville	1,459	1,375 3 6	312 4 4	0 3 10	0 13 2	45 16 3	5 6 3	8 5 0	8 16 3	1,761 14 4	5 8 5	1,746 5 11	82 19 9	1,829 5 8
Five Dock	469	389 9 7	128 0 1	19 7 3	0 13 2	8 15 0	1 12 6	0 2 6	3 4 3	551 1 4	2 7 10	548 16 6	62 5 5	611 1 11
Glebe	4,121	6,398 0 4	370 16 1	118 13 3	24 15 10	162 10 0	105 18 2	12 10 0	110 9 4	7,984 19 9	27 6 2	7,957 13 7	370 1 2	8,327 14 9
Gordon	111		6 1 5	11 16 5	9 10 2	0 7 6	0 2 0	0 7 6	48 10 4	173 12 9	60 1 7	113 11 2		113 11 2
Granville	1,893	1,174 14 8	89 11 9	11 16 5	9 10 2	25 11 3	6 2 0	0 7 6	6 3 4	2,133 5 7	4 1 9	2,129 3 10	234 4 0	2,363 7 10
Guildford	28	43 18 9	9 7 6		1 11 8					54 17 11	0 15 6	54 2 5	36 9 0	90 11 9
Homebush	339	370 13 4	373 4 3	0 11 6	6 10 9	3 7 6				759 1 0	38 10 5	722 10 7	113 2 1	835 12 8
Hoxton Park	1									4 17 6	0 5 0	4 12 6	0 5 0	4 17 6
Hunter's Hill	684	1,213 13 11	921 3 3	8 4 3	8 10 9	24 15 0	20 7 3	4 2 6	11 10 5	2,217 1 4	4 17 4	2,212 4 0	239 3 8	2,451 7 8
Hurstville	2,192	1,007 16 9	253 12 6	33 1 7	46 7 9	35 12 6	30 16 1	1 6 0	32 7 9	1,439 14 3	16 14 6	1,422 19 9	92 0 2	1,514 19 11
Islands	23	435 15 0	826 7 11		62 10 0			0 13 0	1 17 11	1,327 3 10		1,327 3 10	135 5 8	1,462 9 6
Kogarah	1,099	791 8 9	198 4 9	23 10 6	21 3 1	15 6 3	6 17 6	0 15 0	24 15 11	1,085 1 9	12 6 9	1,072 15 0	123 17 7	1,196 12 7
Lane Cove	496	294 17 5	218 9 2	8 6 8	12 1 9	4 17 6	4 9 6	5 15 10	5 15 10	548 17 9	0 15 3	548 2 6		548 2 6
Leichhardt	4,793	3,964 6 3	277 11 6	1 11 0	33 0 5	145 19 9	66 12 11	17 13 9	80 14 2	4,587 0 0	23 4 1	4,563 15 11	395 14 10	4,958 10 9
Liverpool	661	1,017 8 0	415 5 11	9 0 0	5 18 9	4 3 9	7 13 9	4 17 6	0 2 6	1,464 10 2	9 12 7	1,454 17 7	166 4 11	1,621 2 6
Marriokville	4,517	5,566 6 9	632 13 1	12 5 3	45 4 4	189 6 3	173 11 5	114 7 0	163 16 11	6,890 11 0	110 18 1	6,779 12 11	486 11 3	7,266 4 2
Mosman	1,292	1,059 8 6	91 14 11	13 11 2	46 3 1	10 7 6	52 3 3		130 5 7	1,408 14 0	3 15 3	1,399 15 9	104 1 7	1,503 17 4
Newtown	5,239	6,993 11 9	469 16 0		54 0 7	216 10 0	37 13 2	27 11 3	160 4 9	7,949 7 6	35 4 6	7,914 3 0	481 12 2	8,395 15 2
North Botany	915	521 14 1	136 1 6	0 0 8	7 14 7	41 5 0	7 10 0	3 0 0	5 1 9	722 7 7	22 19 6	699 8 1	67 1 8	766 9 9
North Sydney	5,228	7,552 17 6	1,839 13 4	26 2 3	68 7 10	96 0 0	269 9 9	34 0 0	188 14 10	10,963 5 6	61 7 0	10,941 18 6	742 8 0	11,674 6 6
Paddington	4,500	7,530 0 3	917 2 6	0 18 0	29 10 4	156 17 6	63 10 5	14 7 6	107 14 1	8,826 0 7	29 10 11	8,796 18 8	448 6 4	9,245 5 6
Parramatta	22	17 19 11	2,591 0 9	0 2 11	6 14 1					2,929 17 8	78 6 6	2,851 11 2	4 14 6	2,855 16 8
Petersham	3,331	5,075 15 4	306 16 5	2 18 2	40 4 6	87 17 6	177 14 3	13 5 0	187 13 1	5,892 4 3	67 13 6	5,824 10 9	388 10 6	6,213 7 3
Prospect and Sherwood	157	135 7 6	120 5 0	5 7 3	0 6 11	2 9 3			2 15 8	266 8 7	1 18 1	264 10 6	12 9 7	277 0 1
Randwick	2,011	4,110 18 8	786 7 10	14 2 3	261 2 8	74 7 6	123 19 8	2 5 0	110 11 0	5,490 14 8	74 6 10	5,416 7 10	765 15 4	6,182 3 2
Redfern	4,817	7,172 16 9	7,354 0 1		19 15 8	191 13 9	19 19 8	85 2 6	55 0 4	14,847 19 9	27 11 0	14,820 8 9	770 9 10	15,590 18 7
Rockdale	2,569	1,802 3 5	505 4 2	25 7 1	23 6 2	64 13 9	71 0 6	1 0 0	60 19 9	2,534 3 10	10 16 8	2,524 7 2	225 0 4	2,749 7 6
Rookwood	439	651 14 0	559 17 3	0 18 7	7 4 11	25 0 0	61 17 6		1 15 0	1,314 7 3	249 18 2	1,064 9 1	164 12 4	1,229 1 5
Ryde	438	537 2 11	647 17 9	2 10 10	8 11 11	18 6 6	2 5 0		3 10 5	1,218 11 1	2 15 0	1,216 5 3	31 9 7	1,247 14 10
Silver Water	139	73 7 11	19 2 5		3 12 4	3 7 6				99 10 2	4 17 2	94 13 0	4 13 0	99 6 0
Smithfield and Fairfield	101	82 14 1	26 8 7	0 4 8	5 14 6	0 7 6			0 13 7	125 2 11		125 2 11		125 2 11
St. Peters	1,741	1,295 16 3	193 4 7	4 13 7	11 12 1	106 6 3	6 17 6	3 0 0	41 11 11	1,567 2 2	6 11 10	1,560 10 4	136 7 11	1,696 18 3
Strathfield	953	1,556 7 2	311 6 9	4 8 10	20 6 5	12 1 3	82 14 8	5 5 0	61 8 5	2,059 18 9	15 19 9	2,044 8 0	98 5 9	2,142 13 0
Vaucluse	257	804 9 11	12 1 8	0 18 1	0 15 6	3 12 6	8 2 6	0 10 0	5 1 5	835 11 7	0 4 2	835 7 5		835 7 5
Waterloo	2,424	2,644 12 9	861 5 6	0 5 8	19 19 10	120 15 0	12 3 9	7 10 0	32 15 8	3,690 8 2	11 6 2	3,679 2 0	361 9 5	4,040 11 5
Waverley	3,075	4,824 0 7	898 16 1	1 6 10	26 12 3	114 6 3	146 5 11	10 12 6	84 10 6	5,400 19 11	19 19 1	5,380 0 10	385 10 1	5,772 16 11
Willoughby	1,186	1,001 0 0	392 19 3	33 7 3	53 4 8	15 18 9	6 4 6		125 17 3	1,633 11 8	22 14 5	1,610 17 3	257 18 9	1,868 19 0
Willoughby	2,899	5,686 10 8	1,263 6 3		27 14 2	11 15 0	161 14 0	19 2 9	97 9 1	7,368 12 10	21 6 6	7,327 12 4	432 4 3	7,760 16 7

HERBERT J. BEAUMONT,  
Assessor.

ASSESSOR'S REPORT—continued.

GENERAL SUMMARY OF Rates, Fees, &c.

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Ward or Borough.	Summary of Sewerage and Drainage Rates.										General Summary of Rates, Fees, &c., for Water, Sewerage, and Drainage, for 18 months ending 30th June, 1896.						
	No. of Properties liable.	Sewerage Rates	New sewers (broken periods).	New buildings (broken periods).	Drainage Rates.	New drains (broken periods).	Revenue for 18 months ending 30th June, 1896.	Less rates cancelled or removed.	Net Revenue.	Arrears from Previous Years.	Total Sewerage and Drainage rates receivable to 30th June, 1896.	Gross Total Water, Sewerage, and Drainage rates receivable for 18 months ending 30th June, 1896.	No. of Summonses Issued.	Amount sued for during 18 months ending 30th June, 1896.	Amount paid without Summonses.	Total paid during 1895-6.	Arrears to the 30th June, 1896.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Bourke Ward	1,143	18,590 12 4		270 19 5		18,861 11 9	38 5 4	18,823 6 5	430 3 6	19,253 9 11	41,807 12 0	45	504 15 3	38,754 7 3	39,259 2 0	2,605 10 0	
Brisbane Ward	1,266	11,112 0 9		180 0 7		11,292 10 4	18 0 8	11,274 9 8	637 4 5	11,911 14 1	25,913 18 10	76	484 10 11	23,430 0 2	23,923 11 1	1,990 5 9	
Cook Ward	6,084	11,786 3 3		28 7 9		11,794 11 0	29 16 6	11,764 15 6	633 0 0	12,398 4 6	26,601 7 7	270	698 4 10	24,870 14 9	24,968 19 7	1,632 8 0	
Denison Ward	3,701	10,068 16 9	6 10 9	64 10 3	14 16 3	10,755 9 0	49 1 6	10,706 7 6	668 10 10	11,374 18 4	32,899 7 0	114	379 14 0	28,806 3 3	29,245 17 3	3,663 9 9	
Fitzroy Ward	3,517	9,412 11 5	57 1 8	38 16 1	29 19 8	9,538 8 10	6 8 2	9,532 0 8	361 6 7	9,893 7 3	23,394 17 7	96	197 3 10	20,912 4 3	21,109 8 1	1,285 9 6	
Gipps Ward	1,774	5,333 11 10	3 7 10	77 5 2		5,414 4 10	39 4 11	5,374 10 11	567 4 11	5,942 4 10	16,964 9 2	155	509 8 4	13,703 3 3	14,263 11 7	1,559 17 7	
Macquarie Ward	2,075	18,514 11 4		62 9 11		13,577 1 3	60 17 2	13,526 4 1	929 13 10	14,455 17 11	29,842 4 8	102	659 9 9	27,117 7 7	27,776 17 4	2,065 6 11	
Phillip Ward	2,405	7,848 19 11		74 8 9		7,723 8 8	20 2 8	7,703 5 0	664 8 7	8,367 13 7	18,491 6 7	134	418 15 8	16,064 18 10	16,478 14 6	2,012 12 1	
Alexandria	1,890	1,450 17 5	19 14 9	11 0 9	350 5 0	1,842 19 3	9 16 5	1,833 2 10	69 1 9	1,902 4 7	5,274 7 1	159	152 17 3	4,660 4 5	4,813 1 8	461 5 5	
Annandale											2,605 17 11	63	38 3 1	2,342 14 11	2,380 18 0	324 19 11	
Appin											3 5 0			2 12 6		0 12 6	
Ashfield	3,405				1,504 8 8	1,514 7 7	3 1 7	1,511 6 0	71 10 0	1,582 16 0	8,396 6 3	127	149 6 5	7,234 17 10	7,384 4 3	1,012 2 0	
Auburn											577 19 5	35	17 9 1	477 14 4	485 3 5	82 16 0	
Balmain	1,826				475 9 3	470 8 6	2 11 6	476 17 0	10 4 1	487 1 1	11,058 3 9	370	194 17 2	9,810 11 4	10,194 8 6	593 15 3	
Bankstown											28 6 6			5 6 6		22 19 11	
Botany											1,476 9 1	5	3 0 11	1,324 9 6	1,327 10 5	147 18 8	
Burwood											5,035 14 5	94	98 19 8	4,521 2 9	4,615 2 0	429 12 6	
Campbelltown											667 15 4	15	19 17 6	637 7 0	557 4 3	119 10 6	
Camperdown	1,271	1,850 4 5	103 15 3	2 18 11		2,025 13 7	5 1 9	2,020 11 10	645 1 4	2,665 13 2	5,531 19 9	97	93 12 8	4,307 10 7	4,490 3 5	1,132 16 6	
Canterbury	74				11 6 2	11 6 2		11 6 2	1 4 4	12 10 6	703 17 6	23	21 18 1	514 2 4	486 0 5	167 17 1	
Concord											1,891 10 10	27	23 5 3	1,517 16 0	1,541 1 3	350 18 7	
Darlington	744	1,171 14 0		1 7 6		1,173 1 6	1 4 1	1,171 17 5	34 17 9	1,206 15 2	2,589 8 0	66	34 19 11	2,417 10 10	2,476 10 9	112 17 3	
Drummanoyne						95 0 1	0 14 9	95 14 9			1,019 6 3	15	10 18 10	808 5 9	819 4 7	200 1 8	
Enfield	215					85 14 6	1 19 9	83 15 1	7 19 11	101 15 0	1,007 10 11	13	9 6 11	809 2 5	818 8 4	189 2 7	
Erskineville	1,826	527 5 9		0 11 7	894 11 11	1,392 19 8	2 7 0	1,390 9 8	32 13 1	1,423 2 9	3,252 8 5	89	95 4 10	3,024 10 11	3,119 15 9	172 12 5	
Five Dock											611 1 11	7	6 10 2	450 1 4	456 11 6	154 10 5	
Glebe	3,351	4,017 8 5	155 8 9	19 1 0	1,154 8 1	5,349 5 2	82 10 7	5,316 14 7	190 19 1	5,507 13 8	13,535 8 5	183	220 13 10	12,693 4 5	12,884 18 3	790 10 2	
Gordon											113 11 2			86 8 4	86 8 4	27 2 10	
Granville											2,863 7 10	96	50 4 3	2,018 7 7	2,077 11 10	285 16 0	
Guildford											90 11 9	2	4 17 2	33 17 0	38 14 2	51 17 7	
Homebush											835 12 8	2	2 16 2	453 0 6	460 16 8	374 10 0	
Hoxton Park											4 17 6			4 5 0	4 5 0	0 12 0	
Hunter's Hill											2,431 7 8	33	26 10 3	2,067 12 10	2,094 12 1	356 15 7	
Hurstville											1,514 19 11	36	15 11 6	1,224 6 8	1,259 18 0	255 1 11	
Islands											1,462 9 6			1,195 4 10	1,195 4 10	267 4 8	
Kogarah											1,196 12 7	47	24 3 1	969 5 10	993 8 11	203 3 8	
Lane Cove											548 2 6				343 5 2	294 17 4	
Leichhardt	980				107 2 6	167 15 11	0 8 6	167 7 5	14 1 5	181 8 10	5,050 19 7	274	149 0 1	4,207 16 4	4,486 16 5	564 3 2	
Liverpool											1,021 2 6	63	65 19 6	1,323 4 0	1,389 3 5	231 19 1	
Marrickville	72	177 4 0		2 1 0		179 5 0	2 1 2	177 3 10	10 17 7	188 1 6	7,454 5 7	258	175 0 0	6,578 9 11	6,753 9 11	700 15 5	
Mosman											1,508 17 4	56	43 15 5	1,268 12 5	1,307 7 10	196 9 6	
Newtown	8,034	4,174 15 9		33 19 10	044 7 5	4,875 6 5	24 9 7	4,850 16 10	206 7 9	5,057 4 7	13,452 19 3	801	447 8 4	12,176 10 8	12,653 14 0	799 5 9	
North Botany	3	8 11 3		0 4 10		8 16 1	0 1 5	8 14 8	0 11 10	9 6 6	775 16 3	36	14 9 4	672 7 4	686 10 8	88 10 7	
North Sydney	519					756 7 9	4 15 0	756 3 11	28 4 4	783 8 6	11,457 14 9	201	240 18 6	10,016 9 3	10,263 7 9	1,194 7 0	
Paddington	4,154	7,699 5 4	6 13 4	69 14 10		7,789 19 1	56 10 10	7,733 8 8	282 11 0	8,016 0 0	17,256 5 0	305	427 5 11	16,004 2 3	16,431 8 2	824 16 10	
Parramatta											2,536 5 8	3	5 4 8	2,161 3 2	2,166 7 10	369 17 10	
Petersham	2,351	1,057 8 8	40 6 6	14 9 4	569 10 11	1,693 3 11	9 2 1	1,684 1 10	67 2 8	1,751 4 6	7,904 11 9	251	196 11 7	7,286 8 1	7,482 19 8	451 12 1	
Prospect and Sherwood											277 0 1	6	5 2 3	230 2 7	235 4 10	41 15 3	
Randwick	643	1,559 18 1	32 11 9	13 17 3		1,611 7 1	11 0 8	1,600 0 5	126 4 6	1,726 10 11	7,098 14 1	225	296 3 1	5,770 18 9	6,067 1 10	1,341 12 3	
Redfern	4,213	7,481 5 5	0 15 11	22 8 5		7,504 9 9	33 8 2	7,471 1 7	379 14 6	7,850 16 1	23,441 14 8	327	502 19 0	21,785 5 8	22,288 4 8	1,153 10 0	
Rockdale											2,739 7 8	103	67 4 7	2,244 8 0	2,311 12 7	427 14 11	
Rookwood											1,223 1 5	32	12 14 5	921 6 3	934 0 8	295 0 9	
Ryde											1,297 14 10	21	16 11 1	1,133 13 7	1,150 4 8	147 10 2	
Silver Water											99 6 0	2	0 10 3	83 7 6	83 17 9	15 3 3	
Smithfield and Fairfield											125 2 11	11	5 3 10	94 4 2	99 8 0	25 14 11	
St. Peters											1,095 18 3	47	21 5 2	1,507 17 2	1,529 2 4	107 15 4	
Strathfield											2,142 13 0	28	26 7 6	1,788 14 9	1,817 2 3	325 11 0	
Vaucluse											385 7 5	8	8 13 8	254 4 7	262 18 3	72 9 2	
Waterloo	1,869	2,190 9 0	5 9 7	7 17 6		2,203 16 0	4 14 5	2,199 1 7	114 8 2	2,313 9 9	6,354 1 2	121	94 11 5	5,768 6 8	5,862 18 1	491 3 1	
Waverley	1,286	2,013 4 4	31 15 10	10 15 7		2,055 16 9	3 19 3	2,051 16 6	198 10 5	2,169 0 11	7,933 3 10	146	199 4 11	6,991 14 8	7,190 19 7	742 4 3	
Willoughby											1,598 16 0	23	39 3 11	1,554 5 2	1,593 9 1	305 6 11	
Woolahra	1,953	4,050 8 8	24 1 6	23 13 0		4,108 3 2	11 15 8	4,096 7 0	168 0 2	4,264 7 8	12,024 4 3	97	153 19 7	10,636 5 6	10,795 5 1	1,223 19 2	

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HERBERT J. BEAUMONT,  
Assessor.



## Annual Report of Stores Branch.

Sir,

Stores Branch, 12 August, 1896.

I have to report on the work of the past eighteen months as under:—

A special re-organization of this Branch led to a considerable reduction in the duties performed, with a consequent economy of wages. The form of book-keeping instituted by the Government Auditors on the formation of the Board in 1888 has been abolished, and books of the simplest possible form substituted. The duty of Comptroller has been merged with that of Paymaster, and the Store staff now consists of one clerk, a storeman, and a labourer, together with working caretakers at two of the suburban depôts. All stores supplied to the Board not being in contract are now bought by the particular officer requiring the same, and such purchases are not recorded by this Branch. Appended are two statements showing value and source of material passed through this Branch during the eighteen months under review:—

### GENERAL CONTRACTS from 1st January, 1895, to 30th June, 1896.

Article.	Contractor.	Rate	Value.
Building material .....	W. Wales .....	10 % over schedule .....	£ s. d. 219 11 7
do .....	J. Power .....	7½% below schedule .....	76 17 5
General stores .....	J. Keep and Son .....	21½% do .....	1,190 15 9
do .....	Briscoe, Drysdale, & Co. ....	20½% do .....	481 1 6
Uniforms .....	Hatfield Bros.....	.....	154 11 9
do .....	Hordern Bros.....	.....	185 18 7
Pig lead .....	Gibson, Battle, & Co.....	£10 15s. 0d. per ton .....	1,085 11 1
do .....	Briscoe, Drysdale, & Co.....	£11 19s. 6d. per ton .....	902 0 1

### MANUFACTURES within the Colony:—

Article.	Contractor.	Value.
		£ s. d.
C.I. pipes to 8" diameter .....	Pope, Maher, & Co.....	22,249 14 7
C.I. pipes 10" and upwards, and special castings.....	G. and C. Hoskins .....	11,663 14 8
Steel pipes .....	do .....	17,908 0 6
Water-meters.....	J. Danks and Son .....	646 0 8
do .....	Davis, Shepherd, & Co .....	960 0 0
Ball hydrants.....	J. Danks and Son .....	948 4 1
Stop-valves .....	H. Vale and Sons .....	512 5 9
Special castings .....	do .....	91 1 11
		£54,979 2 2

### Stock-taking.

To lessen the cost of an annual counting and valuation of stock it was decided that only such goods of value as were kept under lock and key should be checked annually, while the heavy iron pipes and water-fittings should be checked every other year only. Under this rule the stock-taking of the smaller goods was effected in September, 1895, with the net result of a small surplus, and the satisfactory report of the Examiner of Accounts thereon was adopted by the Board.

### Material recovered from ground.

Several large schemes devised by the Engineer for improving the water supply to the suburbs required new mains of a larger size in replacement of existing mains, which were carted into the outlying depôts, and, after survey, the good material was thoroughly fettled, repaired, and recoated. Several hundred tons were thus treated by an experienced gang of men, at an average cost of 18s. per ton for material and labour. Under ordinary conditions the mains taken out of ground, and found to be worth it, are fettled, &c., by the depôt caretakers as part of their daily work.

### Stock Balance.

	£ s. d.		£ s. d.
Stock in hand, 31st December, 1894 ...	30,020 18 6	Issues... ..	54,083 7 1
Receipts ... ..	43,297 15 3	Stock in hand on the 30th June, 1896 ..	19,235 6 8
	£73,318 13 9		£73,318 13 9

The Secretary.

A. ELLICE FLINT,  
Paymaster and Comptroller of Stores.

## Engineer's Report.

Sir,

Engineer's Office, 9th August, 1896.

I have the honor to submit, for the information of the Board, the Annual Report on the working of the Engineer's Department for the period ending 30th June, 1896.

### 1. WATER SUPPLY BRANCH.

#### Canal and Prospect Reservoir.

A considerable amount of work has been done at Kenny Hill in strengthening and relining of canal and dressing of slopes; the length dealt with was 2,725 lineal feet, making, with length previously treated in 1894, a total length of 3,358 feet.

The slopes of several deep cuttings have been flattened and soiled.

It has been decided, in order to economize in maintenance, to cover in canal at some of the deep cuttings at entrance of tunnels; this, with works of strengthening sides and bottom of canal, will be carried out by contract when funds are available. New drains and flumes have been carried out at 25-mile peg to prevent slips in cutting.

A new line of fencing, 1 mile in length, has also been erected, and thirty wrought-iron gates have been provided and fixed in lieu of slip rails.

The face of cliff at entrance to Cataract Tunnel has been underpinned, and the last shaft has been domed over and carried to surface.

The entrance to Nepean Tunnel has been cleaned out, and inlet extended 32 feet into the river. This work will prevent future silting up, and admit of a free scour in flood-time. Since the work was completed heavy floods have occurred, during which the waters passed over crest of dam to depth of 9 feet, the entrance to tunnel being quite free of silt or obstruction. The advantage of a clear inlet enabled the Superintendent to pass 110,000,000 gallons per day into the Prospect Reservoir, to make up for depletion while the repairs to No. 8 section were in progress, during which time the supply from canal was cut off.

On 26th February, 1896, a slip occurred at 38½-mile peg, when water at rate of 117,000,000 gallons per day was being sent down to the reservoir; steps were immediately taken to repair same, and water was turned on again on 27th.

The intake race at reservoir has been backed and strengthened with rubble, on account of the earth at back being scoured.

The reservoir embankment has been attended to during the last eighteen months since last report, and movements carefully tested by instrument.

Four additional headings were made into the outer slope, making a total of eleven headings and ten drains. The effect of the headings appears to have arrested any movement of outer slope, and consolidated the material by removing the impounded water. During heavy rains the water is quickly removed, instead of being pent up, as heretofore. There is every appearance that this portion of the embankment is now perfectly stable.

The intake-tower and valve-house are in good order, and valves regularly attended to. A new gauge has been fixed in valve-house, which enables the attendant to see the height of water in reservoir without the necessity of going to the intake-tower.

The new cottages which have been erected, and the removal of old buildings around the Veteran Hall, has considerably enhanced the appearance of the place, and admits of Superintendent having men at hand in the event of any contingency occurring.

The Fisheries Department has erected a new hatchery, in connection with breeding of trout, in the ground allotted to them by the Board, an inspection of which is one of the points of interest to visitors.

The planting of trees along the avenue leading from Western Road has been extended, and formation of new paddocks contributes to the handy working of the place for agistment purposes. The revenue from agistment for the period of eighteen months was £505 4s. 8d., the past six months contributing £204 8s. 6d. of the amount.

#### Supply from Prospect Reservoir.

The quantity of water supplied from the reservoir during the eighteen months ending 30th June was 9,104,822,372 gallons, or an average of 16,645,014 gallons per day, or 40.76 gallons per head of population supplied.

#### Works below Prospect Reservoir.

The canal below Prospect has been attended to, and puddle backing to No. 9 embankment has been extended, which has further contributed to prevention of leakage.

The 72-inch main has been recoated with cement wash. This appears to be the best material for the purpose, after trial of several others.

The fence between Pipe-head Basin and Prospect has been enclosed with a dog-proof fence. This work was found to be absolutely necessary to preserve the purity of water in canal, as it was found impossible otherwise to keep dogs out of the reserve.

Owing to the heavy consumption during last summer, it was decided to increase the discharging capacity of the lower canal, and with this view the walls of aqueduct and byewash at Boothtown were raised and additional water sent down to Potts' Hill Reservoir.

ENGINEER'S REPORT—*continued.*

## Potts' Hill Reservoir.

Owing to slips which occurred on the eastern side of the reservoir when water was let out in May, 1895, it was found necessary to strengthen the whole of the pitching on that side, a short length of 321 feet having been previously dealt with by the department. A contract was let for reconstructing and strengthening the pitching by rubble backing and facing with existing pitching. This work was satisfactorily carried out, and water turned into reservoir on 21st October, 1895. In order to expedite the work the Board decided to grant a bonus to contractor, equal to the fine for demurrage, for every week he completed the work under contract time. This concession was availed of, and the reservoir was available for use considerably under the contract limit. The whole of the valves and inlet and outlet chambers were attended to while reservoir was empty.

## Trunk Mains.

I have only to record one burst on the trunk mains during past eighteen months. This occurred on the Liverpool Road at Enfield. Repairs were effected without any appreciable interference with supply to the metropolis.

## Quality of Water.

The water has been analysed every month by the Government Analyst, Mr. Hamlet, and retains its high character for purity.

## General Reticulation.

The reticulation mains generally are in good condition. During the past eighteen months 99 miles of mains have been laid, of which 76 miles are of 6 inches diameter and under, the balance ranging from 8 inches to 20 inches diameter, of cast-iron and steel. The number of leaks reported was 190. This is a very satisfactory record with a system aggregating 900 miles of mains.

During last summer the general system was taxed to the utmost to maintain a supply, the main branches in some instances being too small to meet the supply of districts which they supplied; the districts particularly affected, being Waverley, Randwick, Woollahra, Pyrmont, Balmain, and Strathfield. The Board having approved of schemes for improving the supply to these places, the necessary funds were obtained from the Minister and orders were placed with the contractor for supply of the necessary pipes, and where same were not included in existing contract, fresh contracts were prepared and let for supply of materials and laying of pipes. The works for improving supply to Waverley, Randwick, Pyrmont, Woollahra, North Sydney, and Illawarra suburbs are well advanced and will be available for next summer. Other schemes have been prepared and will be carried out during following year.

The great draught on the reservoirs during the past summer showed that the water did not come in from Potts' Hill fast enough to keep reservoirs at a proper level to ensure sufficient pressure at the higher zones. It was found that to maintain a sufficient head in the screening-tank at Potts' Hill to give the quantity required at Crown-street reduced the head between Potts' Hill and Prospect. Under these conditions the full capacity of the canal could not be availed of. With the view of improving the supply between Prospect and Potts' Hill, surveys and sections have been taken for a trunk-main which will admit of the whole available head being utilised; the main will also act as a duplicate to the 72-inch pipe line and admit of the latter being examined and cleaned when necessary. Funds for this work will be provided for in next Loan Estimates. The lengths of mains cleaned and renewed is shown in report of Chief Inspector.

## House Services.

During the period of eighteen months, 16,124 permits were issued for connections to Board's mains, and 770 inspections were made by the plumbing staff. A large percentage of the complaints re defective supply were found to be due to house services being either corroded or too small for the purpose. In many of the city tenements a  $\frac{3}{4}$ -inch service has been found to be provided for the supply of a terrace of houses. In many instances when the terrace was originally owned by one person, the houses have been subsequently disposed of to various owners with a common right to the service. Under these conditions, when the service becomes defective, the onus of repair becomes a fruitful source of trouble. The Board having power under a late Act to connect premises to the mains under a deferred system of payments, have carried out several contracts on these lines and the system is very much appreciated by small property owners who under other conditions could not avail themselves of a constant supply of water.

## Meter Branch.

The result of the working of this sub-branch for the period of eighteen months is satisfactory. On the completion of the first contract for supply of meters of Board's pattern, a new contract was entered into with Messrs. Davies, Shepherd, & Co., of Sydney and Melbourne for three years' supply. The contract was commenced in April, 1895, and the first delivery was made in July of same year, since which the contractors have delivered 770  $\frac{3}{4}$ -inch, fifty 1-inch, and twenty-five 1 $\frac{1}{2}$ -inch, a total of 845 meters. The manufacture has been highly satisfactory, and reflects great credit on the firm.

During past eighteen months 1,179 meters have been issued on the hiring system, and 182 sold to consumers. The increase of meters under the above system is considerable, indicating that same is appreciated by the public. Where the use of Board's meters shows an increase that of meters by other makers shows a decrease. The number of new meters examined and tested was 154, and number explained, 610.

A considerable amount of work is done for country towns water supply in connection with meters, the number of new meters examined and tested being 307, and number repaired, 169, the majority of meters dealt with being of Board's pattern; the number is an increase on former years. The Board's shops practically deal with the water fittings and meters of the water supply of the Colony as well as the metropolis.

The number of water fittings which have been tested aggregate 95,969; of this number 93,113 were approved and stamped, 2,532 returned for alterations, and 324 condemned.

There

ENGINEER'S REPORT—*continued.*

There is a marked improvement in two directions, viz., in the number forwarded for approval and the number condemned. It speaks well for the manufacturers, as well as for the supervision exercised, that out of such a large number of fittings only 324 should necessitate being rejected.

The bulk of the goods is manufactured locally, and it would appear as if the supply could be kept up from local firms.

In the latter end of 1895 it was found that Board's stamp was being used by unauthorised persons, and on same being investigated the offending parties were proceeded against in the Law Courts, and dealt with.

The various electrical instruments—recorders, gauges, &c.—connected with the service are in good working order.

The report of the Meter Clerk shows a satisfactory record for period of eighteen months. The number of meters fixed was 1,266, the number disconnected 213, leaving a balance of 1,053. Of the number fixed 1,175 were on the rental system.

The number of meters issued since the inception of the Board is, viz. :—

City, Suburbs. and Government buildings ... ..	8,496
Disconnected ... ..	2,362
In operation ... ..	6,134

The number of meters fixed on rental system since April, 1894, is 1,575, showing the system finds considerable favour with the public. As against the above number ninety-one meters of other makers were purchased by owners and fixed.

The number of meters which became inoperative was 526. These were either promptly repaired at Board's repairing shop or replaced by new ones on purchase or hire.

In March the water supply was extended to Gordon-Hornsby district, and since then no less than sixty meters have been applied for and fixed.

The gross revenue from meters, which is in excess of assessment, is £61,632 3s. Of this amount the earnings of Board's meters is £723 16s. 3d. for hire and revenue above assessment of £3,903 18s.; total, £4,627 14s. 3d. The increase of revenue during past six months as compared with corresponding period in previous year, viz. :—

	£	s.	d.
January to June, 1896 ... ..	26,639	12	3
Do 1895 ... ..	20,067	10	8
	6,572	1	7

## Free Supplies of Water.

The quantity of water supplied free to the different charitable institutions and public gardens is, viz. :—

	Gallons.
January to June, 1895—Charitable Institutions ... ..	21,215,000
Public Parks ... ..	6,175,000
July to December, 1895—Charitable Institutions ... ..	23,512,000
Public Parks ... ..	9,457,000
January to June, 1896—Charitable Institutions ... ..	26,455,000
Public Parks ... ..	7,520,000

or a total of 94,334,000 gallons, the value of same, at 1s. per 1,000 gallons, being £4,716 14s.

## Fires.

The number of fires that occurred in the city and suburbs for period of eighteen months is 511. Of this number only forty-five were reported by turncocks as requiring any mention.

It is very satisfactory to note that an ample supply of water was available in each case.

## Pumping Plant.

No. 1 Worthington engine was laid up for general overhaul and renewals from June 6th to July 20th, 1895, the details of which will be found in the Chief Mechanical Engineer's report.

No. 2 Worthington engine has been working satisfactorily without any repairs, except those incidental to ordinary wear and tear. This engine is due for general overhaul, which will be made during the ensuing year.

No. 3 Mort's Dock Company engine had to be stopped for a few days in August, 1895, for purpose of remaking slide valve casing and steam jacket-joints, and removal of some defective valves. With these exceptions and repairs incidental to ordinary wear and tear, the engine has been running daily.

The boilers and connections have been periodically examined, flue spaces cleaned, and defective steam-joints made good.

The fire service of the establishment has been tested monthly, and kept in efficient order ready for emergency.

The Board having decided to dispense with gas, and substitute electric lighting, a contract was entered into with Messrs. Edge and Edge for installing same. This has made sufficient progress that on the arrival of the engine and dynamo the installation will be complete. It is also proposed to provide electric motive power for the repairing and carpenter's shops.

The telephone communication between the Chief Inspector of Water Service and turncocks has proved of the utmost service in case of breaks or other contingencies. The system is now as complete as it is possible to make it. The head works are in direct communication with the central station, and the lines of communication ramify to all the outlying suburbs.

The



ENGINEER'S REPORT—*continued.*

## Duty of Engines.

The work performed by the several engines, as indicated by the returns, is, viz. :—

Crown-street to Paddington	... ..	62,600,000	ft.-lb. per cwt. of coal.
"    Woollahra	... ..	63,400,000	"    "    "
"    Waverley	... ..	54,800,000	"    "    "
Ryde to Ryde Village	... ..	55,500,000	"    "    "
"    Chatswood	... ..	67,300,000	"    "    "
Carlton to Ponshurst	... ..	22,800,000	"    "    "
North Richmond to Richmond	... ..	22,400,000	"    "    "

## Length of Mains under the control of the Board.

The total length of mains, exclusive of trunk mains, under the control of the Board is 891.26 miles. The total number of screw-down hydrants fixed is 1,608, and ball hydrants, 16,904. The length of mains lowered on account of alterations to level of road is 2.31 miles; the length of mains cleaned is 8.92 miles; and length removed, 8.5 miles.

## New Districts.

During the past eighteen months two districts have been added to the area supplied by water, viz., Smithfield and Gordon-Hornsby districts.

The former is provided with a storage tank constructed of concrete, having a capacity of 100,000 gallons, and situate alongside canal, about 3 miles below Prospect. From the tank a 4-inch main is laid to the township, and from which the various streets are reticulated, the length of mains aggregating 3½ miles. The tank provides an ample supply of water, with good pressure when supply to canal is cut off.

Hornsby-Gordon Supply.—The system comprises a pumping plant with engine-house at Chatswood tank reserve, a rising main made of steel, 10 inches in diameter, 7½ miles long, to Wahroongah, the highest point, at which tanks, having a capacity of 40,000 gallons, have been erected. This section also acts as a reticulating main between abovenamed places. From Wahroongah the 10-inch steel main extends to Hornsby township. From the trunk main about 9 miles of reticulating mains, of 6-inch and 4-inch diameter, have been laid, the necessary revenue being guaranteed in each case before reticulating mains are laid.

The engine and tanks were used in other places, the former at Woollahra, and was fitted with a new pump for its present service; the latter formed part of the original North Shore supply. The head which pumps have to work against is 390 feet. This is the greatest head, so far, that the Board's pumping plant has to work against.

The main being of steel, special connections were provided in each length, and the two-way cocks, for house service on each side, are fixed under pressure by a special fitting by the tarmacock.

It is contemplated to provide duplicate plant as a stand-by, and to take up the work during summer months as district develops; also, to erect storage reservoirs at Wahroongah, Hornsby, and Pymble.

Extending the water supply to this district has given a considerable impetus to building, and there is every prospect of the system returning the best results of any under the Board. The contract for manufacture and supply of steel riveted pipes, altering and fixing pumping plant, &c., was carried out by Messrs. G. and C. Hoskins, and erection of tanks by Messrs. Eaton Bros.

## Country Towns Supply under Board's control.

Liverpool.—Beyond a small extension of 6-inch main, of 217 yards, no works of importance have been carried out. The improvement carried out at Liverpool dam in the previous year has been effective in obviating complaints as to quality of water in the township. The works are in good order.

Campbelltown.—The only work carried out here was 223 yards of 4-inch main. The mains, &c., are in good condition.

Richmond.—During past eighteen months 464 lineal yards of mains have been laid, and eighteen new connections made. There is an improvement in the consumption, but the system can never be worked satisfactorily (financially) until the Board has the same rating powers as in the metropolitan area and other country towns in the county of Cumberland. The front boundary fence has been renewed, and new entrance gate fixed.

## Botany Reserve.

In order to conserve as much water as possible for Board's tenants, several of the existing dams have been repaired and made available for storage purposes. During the end of last summer, an abnormally dry one, the water in engine-pond, from which lessees draw their supply for wool-scouring purposes, got so low that fears were entertained that the supply would be seriously curtailed; with the improvements now effected up stream a shortage need not be feared. There are now four large wool-scouring establishments located on the old reserve, and as a large number of hands are employed during the season, the reserve presents a busy scene.

The four lessees, when in full work, use an immense quantity of water—about 554,000,000 gallons in eighteen months—the value of which would equal about £2,310.

The old pumping plant which was erected in 1857, and is now of no use, has been placed for sale, and it is expected that same will be cleared, leaving the building, which is a substantial one, for lease for other purposes.

## Contracts let.

In addition to annual pipe-laying contract, fifty-five contracts for various works have been carried out. The manufacture and supply of cast-iron pipes from 4-inch up to 20-inch diameter, and of inverted steel pipes, 8, 10, and 20 inch diameter, have been carried out with vigour by the contractors for same. The placing of orders for large-sized mains with Messrs. G. and C. Hoskins necessitated them laying  
down

ENGINEER'S REPORT—*continued.*

down new plant, and considering that the men were not accustomed to the work, and stoppages incidental to new plant, the contractors have met the requisitions of the Board very well. A large number of men found constant employment in connection with fulfilling Board's requirements. Every pipe, steel or cast-iron, is made and tested under the immediate supervision of the Board's inspector, who is constantly on the premises.

The old flooring of Crown-street was removed, and a neat tile one substituted. Painting of storage tanks at Chatswood, Ryde, and Ashfield, and suspension bridge, Lane Cove, Crown-street engine-house; erection of cottages, stables, and alteration to Veteran Hall, Prospect; erecting engine-house at Chatswood; constructing effluent drain at Botany; strengthening pitching, eastern slope, Pott's Hill Reservoir; alterations and painting at head office, &c., and also numerous small works carried out by the staff.

## Expenditure on Loan Vote.

The expenditure in connection with works chargeable to Loan Vote for period of eighteen months is, viz.:—

	£	s.	d.
New mains, including trunk and reticulating mains ...	92,640	19	0
Buildings, machinery, and other works ... ..	7,637	13	8
	<u>£90,278</u>	<u>12</u>	<u>8</u>

## Expenditure on Maintenance Vote.

The expenditure on maintenance of works for period of eighteen months was £35,882 17s. 5d., being an increase of about £2,000 per annum over previous year.

## Report of Chief Mechanical Engineer.

Sir,

The Waterworks Reservoir, Crown-street, 10 July, 1896.

I have the honor to submit the following report upon the working of pumping engines, &c., and water supply for the year ending 30th June, 1896.

No. 1 engine was laid up for general overhaul, renewals, &c., from 6th June to 20th July, 1895,—and which overhaul consisted in fitting new piston rings throughout; low-pressure B cylinder was disconnected from high-pressure cylinder, defective broken studs were drilled out, and new ones fitted; low-pressure piston rod glands cut in halves and fitted together with steel plates; new piston rod end and nut fitted; exhaust pipe and valve casing joints remade; Corless valves drawn and adjusted; all connecting gear stripped and adjusted; air-pump buckets drawn; new Muntz-metal guard studs fitted throughout, in the place of defective iron ones; air-pump valves renewed throughout; water channels opened; all brasses of connections let together; compensators dismantled, buckets and glands rebushed; gudgeons trued up and bushes bedded thereto; all valve gear brasses let together; jacketing drain pipes renewed throughout; feed-pump plungers turned up; new neck and gland bushes fitted; new gudgeon pins fitted to plungers and connecting rods; all bushes trued out and new driving studs fitted where found necessary; a new feed valve chest (gun metal) fitted complete; parallel cross-head guides readjusted; main pumps dismantled, cleaned, and coated throughout; valve studs refastened with feathers; 200 defective iron nuts replaced with gun metal nuts; renewed 1 dozen springs, 2 valves and plates, 200 gun metal spring-caps replacing defective iron ones. Since completion of overhaul this machinery has been working uninterruptedly.

No. 2 engine has been working satisfactorily throughout the year, the only casualty of any note being the brass bushes of compensator becoming disarranged; they were replaced by new ones, fitted internally (for the time being) with shoulder bushes to prevent the packing passing through; otherwise, the renewals and repairs were nominal, incidental only to ordinary wear. This engine is now due for general overhaul.

No. 3 engine was laid up for a few days in August, 1895, for the purpose of remaking several slide valve casing and steam jacketing joints; lined-up some bearing brasses; drew air-pump buckets; renewed several valves thereon where found defective. These pumps have since been running daily; only slight renewals wanted incidental to ordinary wear.

Boilers and connections have been periodically examined; flue spaces, &c., cleaned; steam-pipe joints, &c., made good when defective.

The connections for protection of buildings in case of fire have been tested monthly throughout the year in order to their being kept in efficient working order and condition.

The water pumped during the year and a half, as shown in tabulated form herewith, attached.

Water pumped by Crown-street pumps during the year to Paddington Reservoir was 1,909,364,800 gallons, showing an increase of 238.56 million gallons on the previous year, and for the quarter an increase of 66.5 million gallons on the corresponding quarter of the previous year.

The quantity of water pumped to Woolahra Reservoir during the year was 443,229,440 gallons, being an increase of 1.04 million gallons on the previous year, and for the last quarter 9.74 thousand gallons increase on the corresponding quarter of the previous year.

The quantity of water pumped to Waverley Reservoir during the year was 254,526,650 gallons, being an increase of 38.4 million gallons on the previous year, and an increase for the quarter of 2.45 million gallons on the corresponding quarter of the previous year.

Ryde

ENGINEER'S REPORT—*continued.*

Ryde pumping works are in efficient working order. The quantity of water pumped at Ryde during the year to Ryde Hill was 108,654,000 gallons, being 30.12 million gallons increase on the previous year, and to Chatswood, 265,968,000 gallons, being an increase of 55.34 million gallons on the previous year, and for the last quarter of the year an increase in the total pumping of 31.55 million gallons on the corresponding quarter of the year previous.

*Carlton pumps.*—These pumps have been working uninterruptedly for the year, excepting short stoppage for necessary boiler sludging, &c. The quantity of water pumped at Carlton for the year was 40,343,800 gallons, being 14.61 million gallons more than the previous year, and for the last quarter 4.04 million gallons more than the corresponding quarter of the year previous.

The Engineer-in-Chief.

J. FYFE,

Chief Mechanical Engineer.

## Superintendent's Report.

Prospect Reservoir, 6 July, 1896.

I HAVE the honor to report on the state of the main line of conduit, and reservoir embankment at Prospect.

The whole line has been kept in good order, and the following works have been carried out, to improve and strengthen, and otherwise:—

*Potts' Hill Reservoir.*—The whole of the eastern slope of this reservoir has been completed, in the same manner as the first 321 feet in 1894, by strengthening the slopes at back of pitching with a dry rubble wall. The necessity of this was seen immediately after water was let out of reservoir on the 7th of May, 1895, by the slopes slipping for nearly the whole length of the old work. The work was completed and water turned into reservoir on 21st October, 1895.

*D. Davidson's Length.*—The 72' main has been rewashed with cement wash.

Puddle has been extended to Embankment No. 9 on lower canal; this has further stopped some of the leaking.

Owing to the heavy consumption of water last summer it was decided to raise the water in lower canal so as to give a better supply. To carry this out it was necessary to raise the walls of aqueduct and bywash at Boothtown; this was quickly executed, and the extra water put in.

The fence from Pipe Head Basin to Prospect has been made dog-proof; this was found necessary on account of the difficulty of keeping dogs from going into canal.

*Prospect Reservoir Embankment.*—A further number of four headings have been put in at seat of this embankment, making a total of eleven headings and ten drains. This completes the lot intended for the present, and since its completion no movement of outer slope appears to be taking place. It is readily seen in heavy rains how quickly the water is carried off, instead of being pent up in embankment as heretofore. I have no doubt but this part of embankment is now perfectly safe.

The intake race to reservoir has been backed up with rubble stone; this was found necessary as the water from race meeting the water in reservoir caused a heavy scour at back of concrete.

A further lot of trees and shrubs have been planted on each side of the road leading to the Western road. This road has been fenced on each side, thus giving greater facilities for grazing stock taken in for agistment.

The old buildings have been pulled down around Veteran Hall, and new stables erected, together with three new cottages, for the maintenance men at Prospect. This has added very much to the appearance of the place.

Two concrete walls have been put in at Byewash, to prevent scour.

*Ganger Whalan's Length.*—A short embankment at 38½ miles carried away on 26th February, 1896, when 117 million gallons of water were being sent down. Water was cut off at the Cataract on the evening of the 25th, and the scour valve opened above, and water lowered some 2 feet before the bank carried away. This was repaired, and water turned on again on the 27th.

A further mile of fencing has been erected with top rail and four wires.

A further length of 2,725 feet of relining and strengthening of canal pitching on No. 8 Section has been treated similar to the 633 feet carried out in 1894, thus making a total of 3,358 feet completed, in addition to slopes of cuttings, on the lengths being flattened and soiled, together with re-making berm drains.

Several cuttings on Harris and Harvey's lengths. The slopes have also been flattened and soiled.

A new W.I. 30-inch flume has been put in at near 25 miles, to take water from high side of cutting, and putting in a sub-drain 5 feet deep in drain on high side to cut off soakage, and thus prevent slips in cutting.

30 new W.I. gates have been supplied to take the place of slip-rails to bridge crossings.

*Wonson's Length.*—The last shaft to the Cataract tunnel has had a dome put in, also the cliff at entrance to tunnel has been underpinned for a distance of 35 feet. Another 18 feet will be done this year to complete it.

Nepean Tunnel entrance has again been cleaned out, and advantage taken of water being low to extend the tunnel some 32 feet, and clearing large boulders and stores away to give the current of water a free course. This has answered the purpose intended, no silting up having taken place since it was completed, the late heavy rains taking flood-waters some 9 feet over dam, still the entrance was clear, and I was able to pass water on through after closing repairs to pitching on No. 8 Section. This was a great advantage, as I only had some 40 million gallons in Cataract, which I increased to 110 millions required, so as to quickly fill reservoir at Prospect.

The agistment fees for the eighteen months amount to the sum of £505 4s. 8d. £204 8s. 6d. of this is for the last six months ending 30th June, 1896.

W. WAKEFORD,  
Superintendent.

ENGINEER'S REPORT—*continued.*

## METER DEPARTMENT, HEAD OFFICE.

Report of progress in this department from January, 1895, to June, 1896.

Sydney, 21 July, 1896.

THE number of meters fixed during this period is 1,266—of these, 1,175 are rented from the Board—213 cut off, leaving a net increase of 1,053.

Number of meters issued from commencement—City, Suburbs, and Government, 8,496; disconnected, 2,362; in operation, 6,134. The increase is largely in excess of previous years, and is very satisfactory.

The number of meters rented since April, 1894, is 1,575, showing conclusively the favour with which this system is received by the public generally, as out of a total of 1,266 issued between January, 1895, and June, 1896, 1,175 are rented, the balance, 91, representing meters purchased of the Board or elsewhere.

The number of meters which became inoperative during this period was 526. These were in nearly all cases promptly repaired or replaced by rented or purchased meters.

The water was extended to the district of Gordon in March, and already 60 meters have been applied for.

The gross revenue from meters is £61,632 3s. (this amount is in excess of assessment). Of this the portion earned from Board meters is—rents, £723 16s. 3d.; excesses over and above assessment, £3,907 18s.; total, £4,627 14s. 3d.

During the latter part of 1895 and the early part of 1896 the weather was remarkably dry and hot. This will partly account for advance on previous years in the amount of revenue earned and the number of meters issued.

In October, 1895, it was found necessary to appoint an additional reader, but beyond that the expenses in working this department have not been increased, although the additional work involved in issuing rented meters, filling in agreements, &c., &c., is considerable.

Engineer.

E. R. ABSELL,  
Meter Clerk.

The increase during the last six months as compared with the same period in previous year is noteworthy, viz. :—

January to June, 1896...	...	...	...	...	...	£26,639	12	3
January to June, 1895...	...	...	...	...	...	20,067	10	8
						<u>£6,572</u>	<u>1</u>	<u>7</u>

The quantity of water granted free from January, 1895, to June, 1896, is—

		Gallons.		£	s.	d.
January to June, 1895—						
Charitable Institutions	...	21,215,000	@ 1/-	1,060	15	0
Public Parks	... ..	6,175,000	"	308	15	0
		<u>27,390,000</u>		<u>1,369</u>	<u>10</u>	<u>0</u>
July to December, 1895—						
Charitable Institutions	...	23,512,000	"	1,175	12	0
Public Parks	... ..	9,457,000	"	472	17	0
		<u>32,969,000</u>		<u>1,648</u>	<u>9</u>	<u>0</u>
January to June, 1896—						
Charitable Institutions	...	26,455,000	"	1,322	15	0
Public Parks	... ..	7,520,000	"	376	0	0
		<u>33,975,000</u>		<u>1,698</u>	<u>15</u>	<u>0</u>
Totals	... ..	94,334,000		4,716	14	0

ENGINEER'S REPORT—*continued.*

## II.—SEWERAGE BRANCH.

DURING the past eighteen months the following sewers and storm-water drains constructed by the Government Sewerage Department have been transferred to the Board under the provisions of the Amending Sewerage Act of 1889 :—

- (a) Sewers—  
Portion of North Sydney Reticulation Sewers.
- (b) Storm-water Drains—  
Long Cove Creek, 2nd Section.  
Iron Cove Creek, Extension.  
Baptist-street.  
Homebush Creek, 1st Division.  
Iron Cove Creek (Croydon Branch), Lower Section.  
Iron Cove Creek (Croydon Branch), Upper Section.  
Macdonaldtown Park, Extension.

Total length of sewers and storm-water drains aggregate 10.22 miles, and are shown in Appendix A.

## Surveys—New Work, &amp;c.

Surveys have been made for extending the sewerage system to western suburbs, Annandale, eastern slopes of Waverley and Randwick, and southern portion of North Sydney, and for relief drains in city, Paddington, and Woollahra.

## New Sewers.

The length of sewers constructed during the last eighteen months aggregated 22.63 miles, shown in Appendix B.

The total length of sewers and storm-water drains under the jurisdiction of the Board is 244.62 miles.

The construction of reticulating sewers has been pushed on with vigour, in order that the public may have the benefit of improved sanitation without delay when main sewers are completed, and the Board be in a position to collect revenue on the whole to obviate having to pay interest on dead capital.

The low-lying portions of Erskineville, Alexandria, and Newtown will shortly be reticulated, and property owners be placed in the same position as those on higher levels, which are served by the gravitation system, by having improved sanitation, and thus abolish the anomalous state of things in connection with drainage rate.

The low-lying areas referred to were considered by the health authorities as the unhealthiest portions of the several boroughs; and to improve the sanitary condition it was necessary for the Board to anticipate the more complete low-level system by constructing a temporary pumping station to which the sewage of the abovementioned areas will gravitate, and will be lifted from thence to the Erskineville branch of the southern outfall sewer by an installation of shone-ejectors and air-compressors.

The necessary plant, including ejectors, engine and compressors, and connections, was imported from the manufacturers, Messrs. Hughes and Lancaster, the boiler and air-receiver being manufactured locally by Messrs. G. and C. Hoskins. It is anticipated that the whole of the plant will be in working order in a few months, when the efficiency of the system for dealing with low-lying districts will be tested. The number of persons provided for is 8,000.

## Contracts in Progress.

There are twenty-seven contracts in progress, embracing 104,606 lineal feet of foul-water and relief sewers; also for manufacture of sludge-trucks, pumping plant, and repairs to buildings.

## Storm-water Sewers.

The several districts served by the storm-water sewers transferred to the Board have been divided into drainage areas, and rates levied on same, as provided in the Act, the differential rating system being adopted.

The provision of revenue for interest on capital and working expenses, as limited by the Act, does not cover the annual expense. The present result, shown by returns from the accountant, results in a loss of £800 per annum. This shows the advisability of the greatest care being exercised in constructing these ducts, as in the western suburbs the cost of those already constructed will form an appreciable addition to the capital account, and must eventually be met by the revenue on sewerage account; and it is within the bounds of possibility that the rate for the western suburbs will be higher than in the other districts rated by the Board.

## Outfall Sewers.

The northern and southern outfall sewers, with branches thereto, have been inspected and found in good working order. The various penstock valves have been regularly tested and kept in working condition. The automatic flow-recorders continue to give satisfaction.

## Reticulating Sewers—Sydney and Suburban.

The whole of the reticulating sewers are in good working condition; they are kept regularly flushed by the maintenance staff. A few cases of flooding during heavy storms occurred, and measures were taken to prevent a recurrence of same. Considering the mileage of sewers under the Board, the cases of floodings are very few. Owing to an adverse verdict in a case of flooding of premises through a

ENGINEER'S REPORT—*continued.*

defective sewer passing under premises which had been erected over the sewers, and the correct position not being known, the Board were cast in damages. To avoid further actions at law, it was decided to reconstruct such sewers which were found to pass under dwellings on different lines, or, where same was not possible, to so strengthen the sewer that either flooding or crushing of sewer would be prevented. On these lines the Board has altered two lines of drains, and others will be gradually taken in hand.

Arrangements have been made to take over such portions of drainage systems carried out by the Boroughs of North Sydney and Glebe as can be worked in with the new system, under provisions of the Amending Sewerage Act.

The Randwick section has been improved and enlarged, and the majority of the property owners have altered the house system to conform with Board's by-laws.

## Removal of Silt from Sewers.

The quantity of silt removed from the sewers of old system during the past eighteen months was 2,801 tons, of which 2,315 tons were disposed of on Government reclamation works. The quantity from the main outfalls, new system, was—Bondi main sewer 1,350 tons, and Botany main sewer 200 tons. This is an increase on former years, due in a measure to the prevailing dry weather and extension of the reticulating system. The removal of silt from the storm-water sewers, which totalled 2,000 cubic yards, requires considerable labour during dry spells, as, on account of the width and small fall, there is not sufficient scour to carry away the detritus from roads and streets discharging into same.

The abolishing of large pit at Darling Harbour, and carrying main sewer through to harbour, has saved considerable labour in removing silt, as it is more economical to remove by dredge than by hand and cartage to punt.

The Board's silt punt has been thoroughly overhauled and painted.

## Repairs to Sewers.

The following branch sewers, old system, have been thoroughly repaired, and the life of same has been considerably prolonged, viz.:—Elizabeth-street, Pitt-street (in progress).

The repairs effected since the work was taken in hand are as under:—

Jan.	June.		Invert repaired. Feet super.	Pointing. Feet super.	Arch repaired. Feet lineal.
1895-1896...	...	...	5,660	30,914	.....
1894	...	...	4,591	2,352	1,690
1893	...	...	10,212	33,072	59
1891-2-3	...	...	15,354	143,013	68
			<u>35,817</u>	<u>209,351</u>	<u>1,817</u>

The cost of this work is provided out of revenue, and when the whole of the brick sewers, old system, have been dealt with the charge upon revenue will become lighter.

The bricklayers have also carried out work on requisition from the Water Branch of such works as could not well be done by contract.

## Outlet Works.

The buildings, valves, screens, &c., are in good working order. No stoppage has occurred during the past eighteen months. The quantity of silt removed from screening chambers was 1,960 cubic yards, showing an increase of 265 cubic yards over 1894. This is satisfactory, considering the extension of the reticulating sewers discharging into the outfall. The quantity of lime used was  $4\frac{1}{2}$  tons. This is used for washing walls, &c., after cleaning out of sludge.

The oil engine for working lifting grab continues to give satisfaction, the cost per cubic yard of sludge being  $\frac{1}{2}$ d. as against  $\frac{3}{4}$ d. in 1894.

The buildings are being re-coloured and tuck-pointed, this being the first expenditure on this head since Board assumed charge in 1889.

The workmen's cottages are in good repair and all occupied, and trees appear to be thriving.

The locomotive has been fitted with new boiler, and been generally overhauled, and is in first-class running order. The sludge trucks have been repaired, but it was found necessary to have a new set supplied, which can be worked easier by the men in tipping. The temporary bridge is in fair condition, but requires close attention to prevent accident. A scheme is being worked out to dispose of the sludge on the farm by means of a submarine pipe, and obviate the necessity for a bridge.

## Sewage Farm.

The Board have foreclosed on the late lessee, and entered into possession of the farm again. Steps were taken to put it into something like the condition prior to being leased. A contract was let for cleaning up farm, repairing banks and roads, which was satisfactorily carried out. An annual contract was also let for ploughing and harrowing the irrigation and filtration beds, the whole of which had become practically inoperative as filtering media through neglect of lessee. The cow-shed and styes were also cleaned out and lime-washed. When the public were aware that Board had resumed charge, the manager had more applications for agistment than he could comply with, as he had instructions to take no more than he had foed for. New flumes were made, and various other minor improvements carried out. Tree planting has been carried out to a considerable extent on the foreshores to replace the natural scrub, which is gradually disappearing.

The Board's property is now securely fenced in, so that agistment stock can be worked within bounds.

The late staff were re-employed on work being commenced, and it would conduce to the appearance of the place and efficient working if workmen's cottages were erected on the farm, as it would not be advisable for the Board to permit the working of the farm to pass into other hands in the light of past experiences.

The

ENGINEER'S REPORT—*continued.*

The results from stock and pig raising under the Board show that same will be profitable, and stock of approved breed will be placed on same for breeding and sale.

The irrigation and filtration areas are working very well, and the sludge regularly and properly disposed of. The effluent water is regularly analysed by Mr. Hamlet, Government Analytical Chemist, and the working of farm by manager is guided by his reports. The effluent generally bears an uniform character. Report of analysis shown in appendix.

The filtration area has been extended since last report, and main carrier extended in connection with same. The extension comprises 22 acres—11 acres of filtering tanks, which were formed on, nearly as possible, the same lines as the natural tanks, with a 66-foot bank between. One tank is lower than the other and connected by a weir to prevent overflowing of the upper one.

Both tanks are underdrained with subsoil pipes, specially made for the purpose, which have given great satisfaction. The outlet of drain is carried to low-water mark in Botany Bay. There is also provided a high-water discharge in the junction chamber, so that at all tides there is an outlet for subsoil water.

The bank between tanks is planted with two rows of trees; and surface sown with grass. The fringe of the tanks will be planted with willows, which are large absorbers of water. Tree planting is being made a feature on the farm, and I am indebted to Mr. Charles Moore, the late, and Mr. Maiden, the present, Curator of Botanical Gardens, for advice on this matter.

The other section of extension is 11 acres, laid out in undulating pasture land. This will be sown with English grasses, and will eventually form splendid resting paddocks for cattle, and should be a source of profit in the future.

The sandy soil in banks on each side of main carrier has been covered with sludge to prevent the sand being shifted by the wind—the surfaces are gradually being covered with grass and banks becoming set. The railway has been extended to end of main carrier for more efficient working of the Farm. The manager was not able to plant any crops owing to the bad state the ground was left in, but in the coming spring he intends sowing all beds which can be spared.

A return is kept of the flooding of each bed with dates of ploughing and harrowing. A return showing the working of one old and one new bed is shown in Appendix.

The daily flow of sewage on to the farm is 2,059,200 gallons—the late wet weather required the whole of available area to deal with same—a large proportion of which could be turned into the river without detriment or danger to health.

## House Connections.

The number of houses connected with the Metropolitan and Suburban Sewers under the supervision of the Board is:—

	1890.	1891.	1892.	1893.	1894.	1895-6.	Total.
City ... ..	961	541	1,070	1,223	1,050	1,384	6,229
Suburban ... ..	3,804	3,578	3,448	3,437	2,853	3,113	20,233
							26,462
Connected to City Sewers prior to Board's control ... ..							18,000
							44,462

An analysis of the drainages during past 18 months gives the following results:—City, 1,384; Alexandria, 115; Camperdown, 328; Glebe, 990; Erskineville, 46; Marrickville, 36; Newtown, 169; Petersham, 268; Paddington, 118; Redfern, 145; Randwick, 270; Waterloo, 64; Waverley, 244; Woollahra, 104; North Sydney, 216.

The above returns include those properties which were connected under the compulsory section of the Act, and those for which applications were received to have work done under the deferred system of payments, the different numbers being:—

## Compulsory Drainage.

Erskineville, 27; Newtown, 13; Alexandria, 14; Redfern, 3; Waterloo, 11; Camperdown, 2; Paddington, 14. Total, 84.

Deferred payment system:—City, 21; Glebe, 39; Paddington, 11; Randwick, 19; Waverley, 6; Woollahra, 4; Camperdown, 7; Newtown, 7; Waterloo, 2; Alexandria, 10; Redfern, 7; Petersham, 1; North Sydney, 2. Total, 136.

The total number of houses connected under the compulsory powers of the Board and average cost per house is shown under:—

	1891.	1892.	1893.	1894.	1895-6.
City ... ..	19	6	4	.....	.....
Suburbs ... ..	245	240	32	91	84
	£14 14s.	£12 10s.	£18 14s.	£9 14s.	£9 10s.

The number of estimates prepared for work, or applications for work to be done under deferred payment system, was 191.

## House drainage plans.

The fees received for house-drainage plans, and number of plans prepared, was, viz.—

	1890.	1891.	1892.	1893.	1894.	1895-6.	Total.
Plans ... ..	2,213	2,303	2,485	2,669	2,119	2,624	14,512
Fees ... ..	£1,033	£1,088 15s.	£1,087 13s. 6d.	£1,106 7s. 6d.	£818 15s.	£869 5s.	£6,003 16s.

The number of houses surveyed and plotted in record plans was 1864, and the number of building plans lodged for approval was 257.

The reduction in the number of houses dealt with under the compulsory section of the Act is principally due to the provision made whereby property owners, who have not the necessary funds but all the desire to have improved sanitation, can avail themselves of same by the Board doing the work on the deferred payment system.

House-drainage

ENGINEER'S REPORT—*continued.*

## House-drainage Certificates.

The number of official certificates issued to owners in connection with house-drainage since inception of the Board is, viz.—

	1891.	1892.	1893.	1894.	1895-0.
City ... ..	251	272	265	294	335
Suburbs ... ..	1,140	843	1,148	500	514

## Defective Drainage.

The examination of premises with defective drainage by the Board's inspectors has been carried out with fair results as to reconstruction of same. 442 first notices and 113 final notices to alter or repair defective drains were served on properties; of the number, 183 houses were attended to by the owners.

Forty-five house-drains were smoke-tested, and in each case found defective.

The Board is precluded from taking such action as the interests of public health would indicate owing to absence of necessary power to make a charge on property in cases of recalcitrant owners of property connected with the old city system, although such powers are given in connection with the new system. It is in connection with old drainage and obsolete sanitary fittings that the greatest danger lies; and it is impossible to think that the Legislature intended, within certain limits, to withhold on one hand that which they freely granted on the other. The reports received from the Medical Adviser are dealt with by inspections by the inspectors, and notices are served setting out the requirements to place the premises in a sanitary condition.

## Sanitary Plumbing.

This branch, in addition to the ordinary routine of inspection of plumbers' work, makes inspections in connection with returns from Medical Adviser and on request of architects and others.

During the past eighteen months 3,059 jobs have been inspected and passed, for which 1,041 certificates were issued on application of owners; 279 notices to alter defective fittings, out of which 113 were attended to; ten systems were smoke-tested, and 312 soil-pipes tested hydrostatically.

The application of the water test was not one viewed with much favour by plumbers when first introduced; but as it has been the means of detecting faults not visible to the eye or covered up with fittings it has been insisted upon with favourable results to occupiers of the premises.

In one case a cast-iron soil-pipe was found with a cracked socket and an imperfect connection between same and water-closet.

In another instance where three (3) soil-pipes existed the owner objected to the test, but after consideration the test was applied, with the result that the whole three were found defective.

In a third case a soil-pipe was found inside a dwelling with open joints—the bend at top was found to be eaten through with sewer-gas—the joints of waste-pipes in walls found imperfect, and in other cases joints of pipes wrapped with cloth and twine.

The foregoing descriptions are a few of the many cases of defects found in the sanitary fittings of city property, and in similar cases the Board should have power within certain limits of rectifying same in the interests of the health of the city where owners will not take action.

I have to report that a considerable improvement has taken place in the manner in which plumbing jobs are carried out, notwithstanding the keen competition there exists in the trade.

The plumbing class at the Technical College still attracts a large number of young men qualifying themselves for plumbers and the higher branches of the trade.

## Ventilation of Sewers.

The various shafts erected in the city and suburbs have been tested during the year with satisfactory results. The returns are shown in tables at end of report.

Very few complaints were received as to smells from the shafts; these were found on investigation to be unfounded, as far as the shafts were concerned. That many of the complaints originated from sentiment is illustrated by the steps taken by the inspector to close down the shaft unknown to the complainant, who still complained, and on being shown the shaft fitted with an expansion plug, which prevented any sewer-air passing out of shaft, effectually settled the question.

The maintenance staff has been busily engaged in painting existing shafts, which totalled up 1,000 square yards, removing shafts and re-erecting same in other positions on account of alteration to buildings to which they were fixed, repairing cowls, and refastening bonds.

In addition to above, general plumbing work to offices, stores, and pumping-stations has been carried out. During the eighteen months only two shafts were broken by strong gales of wind which prevailed.

## Special Shafts.

## Connections to Factory Chimneys, &amp;c.

		Cubic feet per hour.				
		1891.	1892.	1893.	1894.	1895-6.
Tooth's Brewery ... ..	9" connection	40,286	29,348	42,064	39,072	31,856
Cameron's Tobacco Factory ... ..	6" "	5,369	7,068	5,971	3,927	6,579
Cornwell's Brewery ... ..	6" "	4,522	7,265	5,971	5,183	6,891
New York and Brooklyn Tobacco Factory ... ..	6" "	7,030	7,418	7,147	6,341	12,723
Old Pumping-station, Crown-street .....		6,857	7,456	1,610	1,845	.....
New Pumping-station, Crown-street .....		4,444	1,507	3,124	3,608	*30,896
Hordern's Factory ... ..		.....	.....	8,154	8,750	28,500
Darling Harbour ... ..		.....	.....	.....	6,836	19,184

\* Connected through casing.

Water-sprays

ENGINEER'S REPORT—*continued.*

## Water-sprays Inducts.

	Cubic feet per hour.				
	1892.	1893.	1894.	1895-6.	
*Busby's Bore ... ..	106,677	11,284	.....	268,613	
Obelisk, Hyde Park ... ..	97,811	101,461	89,007	205,597	
Purves-lane, Glebe ... ..	.....	.....	.....	41,959	18" induct.
Toxteth-road, Glebe ... ..	.....	.....	.....	33,762	" "
Macquarie-street, City ... ..	.....	.....	.....	35,340	" "
St. James Road, City ... ..	.....	.....	.....	69,973	" "
Bathurst-street, City ... ..	.....	.....	.....	52,129	" "

\* No water available in bore in 1894.

The total quantity of air delivered by induct sprays into the sewers now connected with Obelisk, Hyde Park, is 229,720 cubic feet per hour, and the work done by the Obelisk is 205,597 cubic feet per hour, the loss being about 11 per cent.

## New Works.

The erection of ventilating-shafts and arrangement for inducing air into sewers by means of watersprays, and connecting up old and new systems, for ventilating purposes, has been vigorously pushed on during the past eighteen months. The effect of the ventilating work has had a marked effect on sewers which have been operated upon; but there is much yet to be done in the outfall sewers and some of the main branches before the system can be considered satisfactory. The greatest trouble has been experienced in locating some of the existing sewers in the city, and in order to reduce the number of shafts the dead ends have been connected up to other sewers which are ventilated, thus ensuring circulation of the air currents.

The amount of work performed during the eighteen months is considerable, representing the erection of 419 exhaust and 266 induct shafts, and fixing 8 induct and 4 exhaust sprays with chambers and automatic fittings. The work extends over the city and eight boroughs, with no less than 1,500 openings in the various streets. Only two complaints were received, which were found not to be due to the contractor. This speaks very highly of the manner in which the contractor falls in with the views of the city and suburban authorities as to restoring streets, notices, &c.

Several of the shafts attached to high buildings vary from 100 to 150 feet in height, several of which are 9 inches in diameter. The average cost of shafts, including watersprays, is about £11 each.

The following boroughs have been dealt with:—Newtown, Camperdown, Glebe, Petersham, Stanmore, Erskineville, Alexandria.

Several shafts have also been erected at request of Borough Councils, viz.: 4 at Balmain and 5 in Strathfield, in connection with stormwater sewers.

A return of the work of the sprays, induct and exhausts, is shown in the appendices, which may be considered satisfactory.

The quantity of material used in contract in progress totals 33,012 feet of ventilating-pipes of 9" and 6" diameter, and 25,186 feet of stoneware connecting-pipes, the average height of shafts being 48 feet.

## Drawings, &amp;c.

During past eighteen months the Chief Draftsman reports that 117 sheets of drawings and 408 tracings have been prepared, and in the Heliotyping Room 1,240 heliotypes were made and 826 plans mounted.

## Expenditure on Loan Vote.

	£	s.	d.
General Vote ... ..	39,235	11	11
Macdonaldtown Vote ... ..	10,614	3	10
Western Suburbs Vote ... ..	16,373	16	0
Waterloo Vote ... ..	692	12	10
Total ... ..	£66,916	4	7

## Expenditure on Revenue Vote, viz., for Maintenance, &amp;c.

	£	s.	d.
January 1st to June 30th, 1895 ... ..	9,188	13	11
July 1st to June 30th, 1896 ... ..	20,690	2	0

## Diagrams.

Sewerage reticulation.	Sewage-discharge diagram.
Zymotic death-rate.	Silt removed.
Death-rate, city and suburbs.	Filter-beds and effluent drains.
Death-map.	Waterspray ventilator.
Temperature in sewers.	

The information furnished by the Government Astronomer and Statistician has been of great value, and I have to thank these gentlemen for their courtesy.

The Assistant Engineers and other officers of both Branches have rendered good service, and I have to record my thanks for their assistance in carrying out the work of the department for past eighteen months.

I have, &c.

J. M. SMAILL.

Chief Engineer.

The Secretary.

APPENDIX.

ENGINEER'S REPORT—continued.

APPENDIX.

RECORD OF TESTS made at Department's Testing-room, Crown-street Depôt.

Portland cement.....	Tested 37 parcels, of which 24 passed and 13 were rejected.
Hydraulic lime .....	" 9 " passed and used in main carrier, Sewage Farm, Botany.
Stoneware pipes .....	" 87 " 30 passed and 57 rejected.
Porous dram-pipes.....	" 7 " 2 samples used as effluent drains, Sewage Farm, Botany.
Concrete pipes .....	" 3 " rejected.
Bricks .....	" 13 " for Metropolitan Sewerage Construction Branch.
Sandstone .....	" 7 " " " "
Sands (various kinds) .....	" 39 " " " "
Roofing tiles .....	" 4 " " " "
Nepean paving .....	" 2 " for use as lining in portions of storm-water sewers.
Mortar .....	" 2 " "

O. H. WINDSOR, Tester. T. GRIFFITHS,  
Assistant Engineer.

APPENDIX A.

TABLE NO. 1.

SEWERS constructed by the Government Sewerage Department and transferred to Board.

Size of Sewer.	Pipes.							Total Length.
	24"	21"	18"	16"	12"	9"	6"	
1895 to 30 June, 1896 .....	.....	.....	.....	.....	.....	29,672	.....	29,672 lin. ft. = 5.62 miles.
Totals							...	313,386 lin. ft. = 59.35 miles.

T. GRIFFITHS,  
Assistant Engineer.

TABLE NO. 1A.

STORM-WATER DUCTS constructed by Government Sewerage Department and transferred to Board.

Size of Duct.	Elliptical.														Open.										Total Length.				
	0' 8 1/2" x 8' 7"	0' 0" x 6' 0"	8' 0" x 6' 0"	8' 4" x 6' 0"	8' 2" x 6' 0"	8' 1" x 6' 0"	8' 0" x 6' 0"	7' 10" x 6' 0"	7' 6 1/2" x 5' 0"	7' 3" x 6' 0"	7' 0" x 6' 0"	6' 8" x 6' 0"	6' 6" x 6' 0"	6' 3" x 6' 0"	6' 2" x 6' 0"	5' 5" x 8' 7"	4' 6" x 8' 0"	27' 0" x 6' 9"	20' 0" x 6' 0"	Size varying from 12' 4" x 10' 10" to 10' 5" x 6' 0"	10' 5" x 6' 0"	9' 0" x 5' 6"	8' 11" x 6' 0"	8' 9" x 5' 6"		8' 5" x 6' 0"	8' 1" x 6' 0"	7' 6" x 6' 0"	6' 9" x 6' 0"
1895 to 30 June, 1896.	43	752	423	1,013	273	332	268	337	379	549	695	310	1,463	469	631	304	101	72	610	489	190	594	412	193	270	347	630	226	24,313 lin. ft. = 4.60 miles.

Size of Duct.	Watercourse 27' 0" x 6' 0"	Circular.											Pipes.				Total Length.		
		5' 7"	5' 5"	5' 0"	4' 11"	4' 9"	4' 7"	4' 0"	3' 7"	3' 6"	3' 4"	3' 2"	3' 0"	2' 0"	21"	21"		18"	16"
1895 to 30 June, 1896....	1,716	213	755	744	395	450	678	272	330	108	319	1,066	2,333	45	323	939	424	455	24,313 lin. ft. = 4.60 miles.
Totals																			63,464 lin. ft. = 12.02 miles.

T. GRIFFITHS,  
Assistant Engineer.



ENGINEER'S REPORT—continued.

APPENDIX C.

VENTILATION OF SEWERS.

DISTRICT OF SYDNEY.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.		
1891	500	5,074,061	896,292	25,911,108	167,377,056	14 min.	9.62	1891	240	3,493,572	655,963	18,463,112	115,241,784	14 min.	9.62		
1892	515	5,631,370	1,105,719	29,537,256	185,760,792	16 "	13.95	1892	241	3,533,900	758,037	18,297,795	127,454,376	15 "	13.95		
1893	538	5,614,550	1,102,416	29,457,934	185,295,388	30 "	8.72	1893	251	3,844,163	754,801	18,115,224	126,800,568	30 "	8.72		
1894	613	6,150,430	1,200,404	29,025,690	203,179,872	10 "	7.80	1894	253	4,133,740	822,459	19,733,016	139,173,112	10 "	7.80		
1895-6	1,026	14,892,876	3,008,985	72,215,640	505,509,480	11 "	10.72	1895-6	520	10,238,563	2,037,051	48,889,200	342,235,072	13 "	10.72		
Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1891	10,148	1,992	47,808	334,656	1.37	9.62	10.52	.0719	1891	14,555	2,859	63,592	480,144	2.75	9.62	23.32	.0378
1892	10,934	2,147	51,528	360,696	2.07	13.95	14.53	.0214	1892	16,032	3,148	75,562	528,864	3.03	13.95	21.72	.0460
1893	10,430	2,049	49,176	314,232	1.97	8.72	22.59	.0194	1893	15,315	3,007	72,163	503,178	2.90	8.72	33.25	.0420
1894	10,048	1,972	47,323	331,296	1.90	7.80	24.35	.0180	1894	14,194	2,845	68,280	477,900	2.74	7.80	35.12	.0375
1895-6	14,515	2,932	70,385	492,699	2.74	10.72	25.55	.0375	1895-6	19,785	3,917	94,017	658,125	3.74	10.72	34.88	1.0702

Total number of shafts tested, 1,546; total number of exhausts tested, 1,026; total number of inducts tested, 520.

DISTRICT OF PYRMONT.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.		
1891..	37	517,484	101,608	2,438,692	17,070,144	9 min.	12.16	1891	22	433,501	85,118	2,047,632	14,333,424	9 min.	12.16		
1892..	36	339,325	76,532	1,836,768	12,857,376	15 "	10.83	1892	21	292,350	51,514	1,236,336	8,654,352	15 "	10.83		
1893	40	418,300	82,133	1,971,192	13,798,344	30 "	6.75	1893	21	217,222	42,651	1,023,624	7,165,368	30 "	6.75		
1894	43	449,920	88,341	2,120,184	14,841,288	15 "	6.45	1894	19	204,900	40,292	965,598	6,758,976	15 "	6.45		
1895-6	45	713,350	140,066	3,361,639	23,531,122	7 "	11.85	1895-6	18	474,470	93,102	2,235,892	16,651,247	11 "	11.85		
Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1891..	13,985	2,746	65,904	461,328	2.64	12.16	21.71	.0848	1891	19,750	3,878	93,072	651,504	3.74	12.16	30.75	.0699
1892..	10,733	2,163	50,592	354,144	2.63	10.83	18.74	.0206	1892	12,517	2,467	58,068	412,776	2.37	10.83	18.51	.0280
1893	10,457	2,053	49,272	344,904	1.98	6.75	20.35	.0190	1893	12,953	2,543	61,032	427,224	2.45	6.75	30.50	.0300
1894	10,463	2,054	49,290	345,072	1.98	6.45	30.09	.0190	1894	10,734	2,117	50,805	356,056	2.04	6.45	31.62	.0208
1895-6	15,852	3,118	74,702	522,914	3.00	11.85	25.42	.0460	1895-6	26,359	5,176	124,216	869,513	4.00	11.85	42.10	.1245

DISTRICT OF ALEXANDRIA.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.		
1891	13	184,502	36,227	869,448	6,036,136	10 min.	10.39	1891	7	162,347	31,877	765,048	5,355,336	10 min.	10.39		
1892	14	69,120	11,608	278,592	1,950,144	8 "	5.04	1892	6	25,440	4,925	119,880	839,160	8 "	5.04		
1893	14	201,000	39,406	947,184	6,630,288	27 "	12.40	1893	6	155,800	30,591	734,184	5,139,288	27 "	12.40		
1894	16	102,000	20,145	483,480	3,384,860	7 "	6.30	1894	6	66,000	13,077	313,848	2,198,936	7 "	6.30		
1895-6	37	487,685	95,737	2,297,695	16,033,367	12 "	8.33	1895-6	25	453,571	94,948	2,278,779	16,951,459	20 "	8.33		
Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1891	15,375	3,019	72,456	507,192	2.91	10.39	28.00	.0423	1891	23,193	4,554	109,296	765,072	4.39	10.39	42.25	.0903
1892	4,223	829	19,896	139,272	0.80	5.04	15.87	.0932	1892	4,240	832	19,968	139,776	0.80	5.04	15.37	.0932
1893	14,357	2,818	67,632	473,424	2.71	12.40	21.17	.0367	1893	25,966	5,098	122,352	865,464	4.91	12.40	38.36	.1205
1894	6,412	1,259	30,210	211,512	1.21	6.30	19.20	.0673	1894	11,100	2,179	52,280	366,072	2.10	6.30	33.33	.0220
1895-6	13,178	2,587	62,099	434,089	2.49	8.33	28.20	.031	1895-6	19,342	3,794	91,101	638,038	3.66	8.33	41.45	.0660

ENGINEER'S REPORT—continued.

DISTRICT OF BLACKFRIARS.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.
1891	47	490,493	97,487	2,339,088	10,377,816	20 min.	7-30	1891	30	484,145	91,135	2,187,240	15,310,080	20 min.	7-30
1892	51	495,280	97,267	2,334,408	10,840,856	15 "	12-28	1892	26	888,670	60,487	1,595,928	11,171,496	15 "	12-28
1893	49	638,768	124,493	2,986,586	20,905,752	35 "	8-20	1893	25	426,718	89,785	2,010,340	14,075,840	35 "	8-20
1894	48	324,880	63,760	1,530,000	10,710,000	10 "	5-20	1894	27	229,020	45,085	1,082,064	7,574,448	10 "	5-20
1895-6	48	458,400	90,007	2,100,162	15,121,147	5 "	10-75	1895-6	29	363,400	79,201	1,900,824	13,305,768	7 "	10-75

Average Work of One Exhaust Shaft								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1891	10,562	2,074	49,776	348,482	2-00	7-30	25-64	-0200	1891	15,467	3,037	72,888	510,216	2-92	7-30	37-43	-0426
1892	10,205	2,003	48,072	336,504	1-93	12-28	15-71	-0186	1892	14,062	2,878	69,072	483,504	2-77	12-23	22-33	-0353
1893	12,934	2,539	60,936	426,552	2-44	8-20	29-75	-0297	1893	17,068	3,351	80,424	562,968	3-23	8-20	39-39	-0521
1894	6,764	1,328	31,872	228,104	1-28	5-20	24-61	-0081	1894	8,504	1,669	40,056	280,392	1-60	5-20	30-76	-0128
1895-6	9,560	1,876	46,003	315,003	1-50	10-75	16-82	-0162	1895-6	12,531	2,731	65,545	458,819	2-37	10-75	22-14	-0280

DISTRICT OF WATERLOO.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.
1891	43	540,051	106,157	2,547,768	17,834,376	12 min.	10-03	1891	15	329,722	64,741	1,553,784	10,876,488	12 min.	10-03
1892	43	562,060	110,360	2,648,652	18,540,564	12 "	13-56	1892	14	311,200	61,116	1,469,784	10,307,488	12 "	13-56
1893	43	624,432	122,608	2,942,472	20,597,304	36 "	12-50	1893	16	495,360	95,300	2,287,200	16,010,400	36 "	12-50
1894	41	370,130	72,076	1,744,200	12,209,400	21 "	7-50	1894	17	265,360	52,103	1,250,472	8,763,304	21 "	7-50
1895-6	42	291,000	57,255	1,374,134	9,618,941	6 "	10-30	1895-6	17	309,000	60,672	1,456,130	10,192,912	6 "	10-30

Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1891	12,569	2,468	59,232	414,624	2-38	10-03	22-73	-0353	1891	21,961	4,316	103,584	725,088	4-16	10-03	43-47	-0855
1892	13,071	2,567-3	61,615	431,306	2-47	13-56	18-21	-0305	1892	22,233	4,365-4	104,770	733,380	4-21	13-56	31-05	-0880
1893	24,521	3,851	98,424	478,968	2-75	12-50	22-00	-0373	1893	30,335	5,956	142,014	1,009,608	5-74	12-50	45-92	-1610
1894	9,027	1,772	42,528	297,396	1-70	7-50	22-66	-0144	1894	15,600	3,004	73,536	514,752	2-95	7-50	39-33	-0435
1895-6	6,943	1,363	32,717	229,022	1-31	10-30	12-71	-0055	1895-6	13,176	3,589	85,655	599,688	3-44	10-30	33-30	-0591

DISTRICT OF LACROZIA CREEK.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.
1891	50	425,128	83,474	2,008,376	14,023,632	12 min.	7-22	1891	16	142,826	28,044	673,056	4,711,392	12 min.	7-22
1892	50	511,120	100,358	2,408,601-6	16,860,211-2	16 "	12-13	1892	16	233,430	46,834	1,109,016	7,700,112	16 "	12-13
1893	52	338,870	66,877	1,596,888	11,378,216	22 "	4-73	1893	15	149,350	29,324	703,776	4,926,482	22 "	4-73
1894	53	563,700	103,718	2,609,232	18,264,624	8 "	9-00	1894	17	292,200	57,478	1,376,952	9,638,064	8 "	9-00
1895-6	47	728,300	145,001	3,432,041	24,024,285	10 "	10-90	1895-6	16	432,900	85,000	2,040,000	14,280,000	9 "	10-90

Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1891	8,500	1,669	40,056	280,392	1-60	7-22	22-16	-0128	1891	9,518	1,809	44,856	313,092	1-80	7-22	24-92	-0162
1892	9,854-33	1,932-8	46,442-32	325,096-60	1-86	12-13	15-34	-0170	1892	15,352-5	3,014-5	72,848	500,430	1-90	12-23	24-67	-0334
1893	6,516	1,370	30,890	214,872	1-23	4-73	20-00	-0075	1893	9,956	1,954	46,890	323,272	1-88	4-73	39-74	-0176
1894	10,417	2,051	49,224	344,568	1-97	9-00	21-58	-0194	1894	17,188	3,374	80,976	566,832	3-26	9-00	36-11	-0523
1895-6	15,496	3,043	73,022	511,155	2-93	10-90	26-48	-0257	1895-6	27,066	5,313	127,500	892,500	5-12	10-90	46-97	-1310

DISTRICT OF NEWTOWN.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.
1895-6	71	1,252,030	254,055	6,097,320	42,681,240	19 min.	13-66	1895-6	67	1,305,136	273,984	6,674,438	46,021,072	21 min.	13-66

Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1895-6	17-947	3,678	85,877	601,144	3-34	13-66	24-46	-0357	1895-6	24,476	4,805	116,341	807,387	4-63	13-66	33-16	-1074

ENGINEER'S REPORT—continued.

DISTRICT OF STRAWBERRY HILLS.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.
1891	83	914,744	179,610	4,310,640	30,174,480	8 min.	9.97	1891	43	575,024	112,900	2,709,744	19,968,208	8 min.	9.97
1892	84	883,085	178,398.3	4,161,449	29,139,143	17 "	15.9	1892	50	644,220	126,402.8	3,035,827	21,260,790	17 "	15.9
1893	87	961,185	188,728	4,629,472	31,706,394	36 "	9.46	1893	52	714,688	140,328	3,367,872	23,575,104	36 "	9.46
1894	93	770,200	151,238	3,629,472	25,406,304	7 "	6.82	1894	47	584,000	114,796	2,754,864	19,284,048	7 "	6.82
1895-6	99	1,319,700	264,738	6,353,712	44,475,984	9 "	7.58	1895-6	42	878,200	181,500	4,366,000	30,492,000	12 "	7.58

Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1891	11,021	2,104	51,936	363,552	2.08	9.97	20.86	.0216	1891	13,374	2,626	63,024	441,168	2.53	9.97	25.37	.0220
1892	10,421.16	2,035.68	48,668.38	34,2084.23	1.96	15.9	14.94	.0204	1892	12,396.33	2,653.3	60,630.33	424,426.60	2.43	15.90	17.57	.0257
1893	11,048	2,169	52,656	364,392	2.09	9.40	22.00	.0218	1893	13,744	2,698	64,752	453,264	2.80	9.46	27.48	.0338
1894	8,231	1,629	39,024	273,168	1.56	6.82	22.37	.0121	1894	12,438	2,442	58,608	410,256	2.35	6.82	34.45	.0276
1895-6	13,320	2,674	61,178	449,252	2.52	7.58	33.24	.0317	1895-6	20,909	4,321	103,714	726,000	3.96	7.58	62.24	.0784

DISTRICT OF SURRY HILLS.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.
1891	71	514,316	109,936	2,423,664	16,965,648	10 min.	6.06	1891	39	476,089	93,598	2,246,352	15,724,464	10 min.	6.06
1892	67	844,720	165,861	3,980,664	27,864,648	16 "	13.37	1892	32	649,560	127,539	3,060,936	21,426,562	16 "	13.37
1893	67	676,700	132,870	3,183,880	22,322,160	32 "	9.75	1893	32	508,700	99,893	2,397,192	16,739,344	32 "	9.75
1894	48	835,700	164,039	3,938,136	27,568,052	6 "	8.59	1894	37	742,400	145,770	3,498,480	24,480,300	6 "	8.59
1895-6	72	859,500	168,762	4,050,308	28,352,155	7 "	8.1	1895-6	34	636,760	131,843	3,236,241	22,653,634	11 "	8.1

Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1891	7,242	1,422	34,128	235,396	1.37	6.06	22.00	.0093	1891	12,217	2,399	57,576	403,032	2.31	6.06	33.11	.0266
1892	12,288.75	2,412.50	57,900.25	405,801.75	2.32	13.37	17.85	.0271	1892	19,445.75	3,817.97	91,631.5	641,429.5	3.67	13.37	23.31	.0691
1893	10,100	1,983	47,592	333,144	1.91	9.75	19.58	.0182	1893	15,897	3,121	74,904	524,328	3.01	9.75	30.87	.0463
1894	12,289	2,413	57,912	405,384	2.32	8.59	27.00	.0269	1894	23,064	3,939	94,536	661,752	3.80	8.59	44.23	.0722
1895-6	11,937	2,344	56,254	393,780	2.07	8.1	25.55	.0214	1895-6	20,198	3,966	95,183	664,235	3.82	8.1	47.16	.0729

DISTRICT OF PADDINGTON.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.
1891	66	611,285.9	120,020	2,880,624	20,164,368	10 min.	8.60	1891	30	632,500	104,676	2,509,824	15,568,768	10 min.	8.60
1892	60	699,710	137,338	3,297,312	23,081,181	22 "	17.00	1892	29	591,660	116,161	2,787,964	19,515,048	22 "	17.00
1893	60	648,710	127,374	3,056,976	21,398,332	23 "	10.00	1893	28	421,950	82,849	1,988,376	13,918,632	28 "	10.00
1894	65	624,500	122,620	2,942,880	20,600,160	10 "	8.50	1894	27	323,300	63,470	1,523,496	10,664,472	10 "	8.50
1895-6	61	546,800	107,168	2,572,027	18,061,190	7 "	8.50	1895-6	27	432,900	85,060	2,040,000	14,280,000	8 "	8.50

Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1891	9,258	1,813	43,632	305,424	1.75	6.93	25.25	.0153	1891	17,754	3,436	83,684	585,648	3.36	6.93	48.48	.0504
1892	11,784	2,304	55,296	387,072	2.21	17.51	14.24	.0254	1892	20,313.66	4,086.68	98,080	680,560	3.94	19.00	22.90	.0788
1893	10,811.83	2,022	48,528	339,696	2.04	10.10	20.19	.0208	1893	15,069	2,958	70,992	498,044	2.85	10.10	28.21	.0406
1894	9,607	1,836	45,264	316,948	1.81	8.50	21.29	.0163	1894	11,974	2,351	56,424	394,968	2.26	8.50	26.58	.0255
1895-6	8,948	1,757	42,164	295,151	1.69	8.50	19.88	.0142	1895-6	16,033	3,143	75,663	533,838	3.03	8.50	35.64	.0450

DISTRICT OF NORTH SIDNEY.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.
1895-6	14	133,200	26,164	627,601	4,303,842	5 min.	7.96	1895-6	10	109,100	21,422	514,123	3,598,600	7.5 min.	7.96

Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1895-6	9,514	1,868	44,835	313,845	1.8	7.96	22.61	.0162	1895-6	10,910	2,142	51,412	359,896	2.06	7.96	25.88	.0212

ENGINEER'S REPORT—continued.

DISTRICT OF REDFERN.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.
1891	74	723,303	143,024	3,432,504	24,027,523	17 min.	7.57	1891	28	207,412	53,397	1,401,528	9,810,696	17 min.	7.57
1892	73	757,480	148,791	3,569,344	24,986,808	13 "	11.56	1892	28	489,750	96,162	2,307,888	16,155,216	15 "	11.56
1893	68	921,330	121,608	2,927,932	20,495,004	25 "	7.40	1893	28	305,080	77,573	1,861,762	13,032,264	23 "	7.40
1894	74	720,700	142,087	3,424,488	23,971,416	17 "	7.80	1894	27	425,000	83,037	2,007,288	14,051,016	17 "	7.80
1895-6	75	776,000	152,289	3,664,036	25,584,562	6 "	7.22	1895-6	26	534,500	104,949	2,518,778	17,031,445	8 "	7.22

Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1891	9,339	1,932	46,268	323,876	1.86	7.57	24.57	-0.172	1891	10,618	2,085	50,040	350,230	2.01	7.57	26.55	-0.202
1892	10,097.25	1,932.73	47,580	333,102	1.90	11.56	17.80	-0.186	1892	18,991.5	3,727.5	89,460	626,230	3.69	11.56	32.37	-0.710
1893	9,137	1,794	43,056	301,392	1.73	7.40	23.37	-0.149	1893	14,110	2,770	66,450	465,360	2.07	7.40	36.08	-0.356
1894	9,820	1,928	46,272	323,904	1.86	7.80	23.64	-0.172	1894	15,776	3,097	74,328	520,296	2.98	7.80	35.20	-0.444
1895-6	10,341	2,030	48,732	341,127	1.95	7.22	27.28	0.190	1895-6	20,557	4,036	96,976	678,132	3.89	7.22	53.87	-0.766

DISTRICT OF RANDWICK.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.
1894	13	274,600	53,057	1,291,968	9,064,776	5 min.	10.0	1894	3	88,800	11,545	277,080	1,039,660	5 min.	10.0
1895-6	13	88,200	17,318	415,632	2,909,424	5 "	9.5	1895-6	3	45,600	8,963	214,872	1,504,104	5 "	9.5

Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1894	21,138	4,150	99,000	697,200	4.00	10.0	40.00	-0.800	1894	19,600	3,348	92,352	646,464	3.71	10.00	37.1	-0.683
1895-6	6,785	1,392	31,072	223,802	1.23	9.5	13.47	-0.031	1895-6	15,200	2,984	71,624	501,368	2.87	9.5	30.21	-0.411

DISTRICT OF WOOLLAHRA.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.
1891	17	141,054	27,096	664,704	4,632,928	15 min.	7.62	1891	11	78,233	15,371	383,904	2,682,828	15 min.	7.62
1892	18	172,320	33,535	812,040	5,684,280	20 "	18.00	1892	10	134,320	26,374	632,976	4,430,342	20 "	18.00
1893	20	95,220	18,696	448,704	3,140,928	12 "	6.00	1893	11	81,103	15,924	382,176	2,675,242	12 "	6.00
1894	33	425,700	83,536	2,006,064	14,042,448	10 "	7.42	1894	26	440,100	86,413	2,073,912	14,517,384	10 "	7.42
1895-6	41	497,100	97,605	2,342,532	16,397,724	8 "	6.50	1895-6	27	374,800	73,592	1,766,206	12,363,456	10 "	6.50

Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1891	8,296	1,620	39,096	278,672	1.57	7.62	20.6	-0.123	1891	7,110	1,397	33,528	234,696	1.34	7.62	17.58	-0.080
1892	9,573	1,879	45,000	315,672	1.81	18.00	10.55	-0.160	1892	13,482	2,637	63,288	443,616	2.64	18.00	14.11	-0.322
1893	4,761	934	22,416	156,912	0.90	6.00	15.0	-0.040	1893	7,373	1,447	34,728	243,096	1.39	6.00	23.16	-0.096
1894	11,203	2,199	52,776	369,432	2.12	7.42	23.57	-0.224	1894	16,927	3,323	79,752	558,264	3.20	7.42	43.12	-0.512
1895-6	12,124	2,380	57,135	399,944	2.29	6.50	35.23	-0.202	1895-6	13,831	2,723	65,415	457,906	2.62	6.50	40.30	-0.343

DISTRICT OF WAYERLEY.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.
1894	16	107,800	38,830	932,112	6,524,784	6 min.	7.32	1894	17	307,600	60,897	1,449,528	10,146,696	6 min.	7.32
1895-6	19	301,400	69,180	1,420,320	9,942,240	5 "	12.95	1895-6	15	324,800	63,774	1,530,588	10,714,116	7 "	12.95

Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1894	12,362	2,427	58,248	407,736	2.34	7.32	31.98	-0.274	1894	18,094	3,562	85,248	596,736	3.44	7.32	46.99	-0.501
1895-6	15,863	3,115	74,764	523,276	3.00	12.95	23.25	-0.450	1895-6	21,658	4,252	102,039	714,274	4.10	12.95	31.78	-0.840

ENGINEER'S REPORT—continued.

DISTRICT OF STANMORE.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.		
1895-6	9	186,800	36,078	880,276	6,161,934	12 min.	17.3	1895-6	6	172,300	83,831	811,947	5,633,626	17 min.	17.3		
Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1895-6	20,765	4,075	97,808	984,659	3.93	17.3	22.71	.0772	1895-6	23,716	5,633	135,324	947,271	5.43	17.3	31.38	.1474

DISTRICT OF ERSKINEVILLE.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.		
1895-6	4	18,200	3,678	85,766	600,360	23 min.	5.5	1895-6	5	39,810	7,916	187,600	1,313,204	24 min.	5.5		
Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1895-6	4,550	893	21,441	150,690	.86	5.5	15.63	.0037	1895-6	7,962	1,563	37,320	262,641	1.5	5.5	27.27	.0112

DISTRICT OF GIEBE AND BALMAIN.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.		
1895-6	82	1,514,466	303,173	7,396,152	51,773,064	14 min.	16.14	1895-6	67	1,422,336	279,275	6,792,616	40,018,312	15 min.	16.14		
Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1895-6	18,469	3,758	90,197	631,878	3.49	16.14	21.62	.0608	1895-6	24,053	4,899	117,589	823,123	4.72	16.14	20.24	.1113

DISTRICT OF CAMPERDOWN.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.		
1895-6	31	765,024	151,173	3,628,162	25,397,064	16 min.	15.4	1895-6	21	376,350	76,896	1,773,512	12,414,682	12 min.	15.4		
Average Work of One Exhaust Shaft.								Average Work of One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1895-6	24,355	4,876	117,037	819,260	4.61	15.4	29.93	.1062	1895-6	17,921	3,518	84,453	591,171	3.89	15.4	22.01	.0574

DISTRICT OF PETERSHAM.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.		
1895-6	23	360,192	109,976	2,639,425	18,475,973	19 min.	14.35	1895-6	13	459,732	83,501	2,124,020	14,863,206	27 min.	14.35		
Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage of Wind.	lb. pressure per sq. foot.
1895-6	24,352	4,731	114,767	803,303	4.61	14.35	32.12	.1062	1895-6	34,671	6,803	163,387	1,143,708	6.66	14.35	45.7	.2151

## ENGINEER'S REPORT—continued.

## Steam Shafts, Water Sprays, and Stacks, 1895 and 6.

Date.	Instrument.	Time.	Anemometer.			Lineal Feet per Hour.	Cubic Feet per Hour.	Miles per Hour.	lb. Pressure per Square Foot.	Locality.
			Start.	Finish.	Difference.					
1895.		h. m.								
29 Oct...	6	0 15	51,200	69,300	18,100	72,400	31,856	13.71	.9398	Exhaust 9-in. pipe, Tooth's Brewery (Stack).
29 " ...	10	168 0	544,500	4,533,500	3,989,000	23,744	41,939	4.49	.1008	Induct 18-in. pipe, Purves-lane, Glebe (Water spray).
8 Nov...	9	0 15	1,291,900	1,302,800	10,900	43,600	19,184	8.25	.3403	Exhaust 9-in. pipe, Darling Harbour (Stack).
15 " ...	10	48 0	4,587,600	5,504,700	917,100	19,106	33,762	3.61	.0651	Induct 18-in. pipe, Toxteth Road, Glebe (Water spray).
11 Dec...	8	0 20	443,600	455,300	11,700	35,100	6,891	6.64	.2203	Exhaust 6-in. pipe, Cornwell's Brewery (Steam).
11 " ...	8	0 15	455,300	466,700	11,400	45,600	21,500	8.63	.3723	" 9-in. x 10-in., Hordern's (Stack).
11 " ...	9	0 15	1,620,100	1,630,300	10,200	40,800	25,500	7.72	.2979	" " "
1896.										
8 Jan...	2	0 15	6,304,200	6,312,600	8,400	33,600	6,597	6.36	.2022	" 6-in. pipe, Cameron's Factory (Steam).
8 " ...	2	0 10	6,312,600	6,323,400	10,800	64,800	12,723	12.27	.7527	" " New York and Brooklyn Factory.
21 " ...	2	5 0	6,339,100	6,690,200	351,100	70,220	30,896	13.3	.8844	" 9-in. pipe, Crown-street (New stack).
20 Mar...	7	1 30	828,900	894,600	65,700	43,800	205,537	8.29	.3436	" 26-in. x 26-in., Obelisk (Water spray).
20 " ...	7	0 5	896,200	899,500	3,300	39,600	69,973	7.5	.2812	" 18-in. pipe, St. James' Road (Water spray).
26 " ...	7	0 15	902,300	907,300	5,000	20,000	35,340	3.78	.0714	Induct 18-in. pipe, Macquarie-st. (Water spray).
15 Apl...	8	0 12	857,200	863,100	5,900	29,500	52,129	5.58	.1556	Exhaust 18-in. pipe, Bathurst-st. (Water spray).
15 " ...	8	0 12	863,100	873,700	10,600	53,000	93,856	10.03	.503	Exhaust 18-in. pipe, Elizabeth-st. (Water spray).
28 May...	5	0 20	116,000	131,600	15,600	46,800	36,756	8.86	.3925	Induct 12-in. pipe, Erskine-st. (Water spray).
28 " ...	5	0 10	131,600	135,300	3,700	22,200	39,229	4.2	.0882	" 18-in. pipe, Kent-street (Water spray).
28 " ...	5	0 10	140,800	143,500	2,700	16,200	28,627	3.06	.0468	" 18-in. pipe, Harrington-st. (Water spray).
29 " ...	5	1 0	143,700	161,500	17,800	17,800	31,454	3.37	.0567	" 18-in. pipe, Loftus and Bridge Streets (Water spray).
1 June...	9	3 30	2,140,000	2,219,800	79,800	22,800	4,476	4.31	.0328	Exhaust 6-in. pipe, Crown-street (Old stack).
30 " ...	2	0 15	6,827,800	6,847,500	19,700	78,800	368,613	14.92	1.113	Induct Busby bore, 25-in. diameter.
30 " ...	11	1 15	1,362,800	1,418,400	55,600	44,480	78,000	8.42	.3545	Exhaust 18-in. pipe, Liverpool and Elizabeth Sts. (Water spray).
3 July...	11	3 0	1,418,400	1,517,400	99,000	33,000	58,314	6.24	.1916	Induct 18-in. pipe, Pitt-street (Water spray).

EXHAUST WORK.—1,008 6-in. shafts, 18 9-in. shafts, and 14 stacks, steam shafts, and water sprays.  
 Exhaust per hour, 3,675,563 cubic feet of air; per day, 88,213,512 cubic feet; per week, 617,494,584 cubic feet.  
 INDUCT SHAFTS.—514 6-in. shafts, 6 9-in. shafts, 9 water sprays.  
 Induct per hour, 2,611,108 cubic feet of air; per day, 62,666,592 cubic feet; per week, 438,666,144 cubic feet.

O. H. WINDSOR,  
 Tester.

ENGINEER'S REPORT—continued.

APPENDIX D.

Government Laboratory, Sydney, 24 June, 1896.

ANALYSIS of a Sample of Water received from effluent from Sewage Farm.

		Results expressed in—	
		Grains per gallon.	Parts per 100,000.
Appearance in 2-ft. tube	Well A } Clear brown, but not offensive		
	" B }		
Chlorine as chlorides	" A	6.8	
	" B	7.4	
Nitrogen existing as free ammonia	" A		1.3
	" B		1.5
Organic nitrogen, or "Albuminoid Ammonia"	" A		6.0
	" B		7.0
Oxygen absorbed in 15 minutes at 80° Fah.	" A		10.0
	" B		14.0
Total solid residue dried at 220° Fah.	" A	35.0	
	" B	46.5	
Phosphates from animal impurity	" A	25.0	
	" B	40.0	

General observations on the character of the water.—May be allowed to pass into tidal waters and estuaries without creating offence.

WILLIAM H. HAMLET,  
Government Analyst.

APPENDIX E.

SEWAGE Farm Filter Tanks, Flooding, and Filtration.

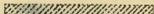
Tank.	Area.	Sewerage.		Depth.	Time of Filtration.	Last Previous—		Filtrate		Remarks.
		On.	Off.			Flooding.	Harrowing.	Color.	Smell.	
A	a. r. p.			ft. in.						
A	6 2 0	14 Jan.	20 Jan.	2 6	4 days ..	Newly formed		Brown	Bad	This tank has only newly been formed, and is subdrained with porous pipes. The tank is capable of filtering a great deal more sewage than any of the old tanks, but the effluent is not nearly so pure.
A	6 2 0	1 Feb.	6 Feb.	2 0	4 ..	" "		"	"	
A	6 2 0	11 "	16 "	2 3	5 ..	" "		"	"	
A	6 2 0	18 "	22 "	2 0	5 ..	" "		Improving	Improving	
A	6 2 0	24 Mar.	30 Mar.	2 6	6 ..	24 Mar. ...	Not harrowed	"	"	
A	6 2 0	5 May	10 May	1 0	6 ..	24 " ...	25 April	Straw	"	
A	6 2 0	5 June	9 June	2 0	7 ..	24 " ...	25 " "	"	"	
A	6 2 0	16 "	20 "	1 9	6 ..	24 " ...	25 " "	"	"	
H	5 2 27	17 Jan.	19 Jan.	0 6	3 ..	1895 .....	1895	Clear	Very little	
H	5 2 27	3 Feb.	4 Feb.	0 6	3 ..	" .....	"	"	"	
H	5 2 27	19 "	21 "	0 5	4 ..	" .....	"	"	"	
H	5 2 27	29 "	30 "	0 3	2 ..	" .....	"	"	"	
H	5 2 27	17 Mar.	20 Mar.	0 6	4 ..	" .....	"	"	"	
H	5 2 27	2 April	4 April	0 4	3 ..	30 Mar. ...	"	"	"	
H	5 2 27	17 "	19 "	0 4	2 ..	30 " "	"	"	"	
H	5 2 27	20 May	23 May	0 6	2 ..	30 " "	— April	"	None	
H	5 2 27	23 June	25 June	0 9	5 ..	19 June ...	— " "	"	"	

W. BROOKS,  
Manager.

[8 plans.]

# METROPOLITAN BOARD OF WATER SUPPLY AND SEWERAGE. SYDNEY.

PLAN SHOWING THE GENERAL SCHEME OF WATERWORKS UNDER THE CONTROL OF THE BOARD

AREA SUPPLIED WITH WATER  
 PREVIOUS TO THE BOARD'S CONTROL. SHOWN THUS   
 EXTENSION OF AREA BY BOARD TO END OF 1894. " "   
 AREA ADDED FROM 1894 TO END OF JUNE 1896. " " 

*M. Small*



**PROSPECT RESERVOIR**  
 Catchment Area above embankment 2400 acres  
 Area of Surface of Water when full 1261 acres  
 Total Contents (195 Contour) 13,812,315,000 Gallons  
 Total Contents (170 Contour) 4,067,910,000 " "  
 Total Quantity available for supply to Canal 6,744,343,000 Gallons

**POTTS HILL RESERVOIR**  
 Dimensions at Top Water Level  
 Top Water Level 175.00 Ft. Length 1134 Ft. Width 834 Ft.  
 Area 244 acres. Available depth 167 Ft. 6 in.  
 Total Capacity 108,185,401 Gallons  
 Available Quantity 96,110,315 Gallons

Capacity of Works above Prospect 150,000,000 gallons daily  
 Quantity of Water which Conduits will deliver (average since 18 1/2) 95,000,000 daily

**SERVICE RESERVOIRS**

No	Name of Reservoir	Reduced Top Water Level above N.W.M. Sydney Harbour	Depth	Capacity in Gallons	Diameter of Inlet Pipe	Diameter of Outlet Pipe
1.	Crown Street	141.00	15' 6"	3,250,000	42"	2'-20"
2.	Paddington	214.00	16' 6"	2,000,000	36"	1'-35"
3.	Centennial Park (low being constructed)	245.00	20' 0"	18,500,000	42"	1'-24"
4.	Woollahra	282.00	18' 0"	1,000,000	40"	42"
5.	Waverley	360.00	20' 0"	1,087,000	18"	1'-18"
6.	Petersham	166.00	27' 0"	2,157,000	42"	1'-20"
7.	Ryde Hill	234.00	22' 0"	1,000,000	24"	18"
8.	Chatswood No 1	370.00	32' 6"	1,500,000	24"	2'-20"
9.	Chatswood No 2	370.00	32' 6"	1,500,000	24"	2'-20"
10.	Wahroonga	717.00	5' 0"	40,000	9"	9"
11.	Penshurst No 1	272.00	5' 0"	22,800	6"	6"
12.	Penshurst No 2	270.00	32' 6"	1,000,000	15"	15"
13.	Smithfield	175.00	17' 0"	100,000	12"	6"
14.	Richmond	206.00	13' 0"	225,000	6"	6"

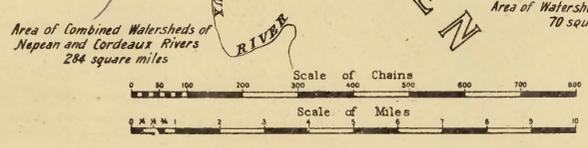
**TUNNELS**

Name of Tunnel	Length in Feet	in Miles
Nepean	23,507	4.45
Cataract	9724	1.85
Devine's No 1	600	.11
Devine's No 2	2680	.51
Sugarloaf	3900	.74
Mount Anna	2250	.43
D <sup>o</sup> (extension)	605	.12
Badgelly	3780	.72
Mollesman	700	.13
Box	400	.08
Cecil Hills	10610	2.00
Devils Back	950	.18
Calmsley	1230	.23
Trafalgar	650	.12
<b>Total</b>	<b>61,586</b>	<b>11.66</b>

**LENGTH OF DIFFERENT CLASSES OF CONDUIT**

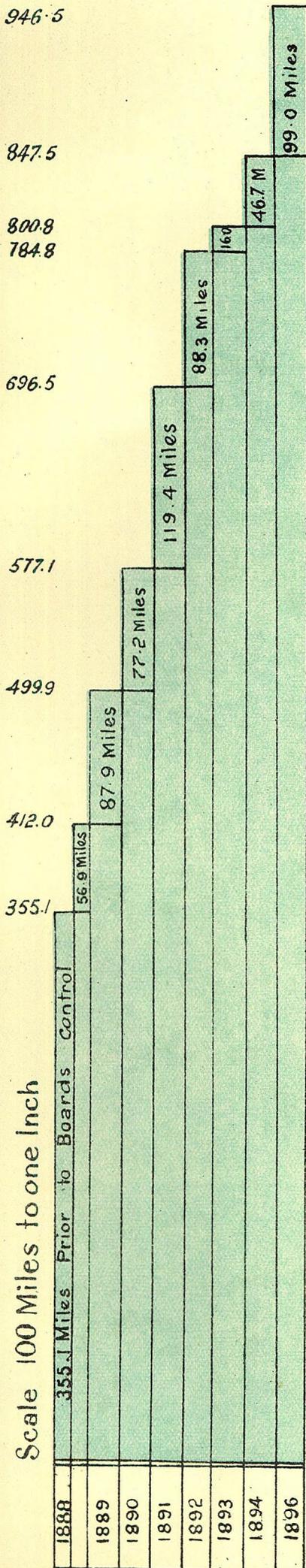
Tunnels	11 1/2 miles
Canals	33 3/4 "
Across Prospect Reservoir 30" Pipe	1 3/4 "
Wrought Iron Flumes 8 1/2, 7 1/2, 6 1/2	1/2 "
Wrought Iron Pipes 6"	4 3/4 "
Cast Iron Pipes 4 1/2"	7 1/2 "
Cast Iron Pipes 3 1/2"	3 3/4 "
<b>Total</b>	<b>63 3/4 miles</b>

**WATER LEVELS**  
 The heights marked on the Line of Conduit denote the Level of Water Surface when running full, and are above High Water Mark Sydney Harbour

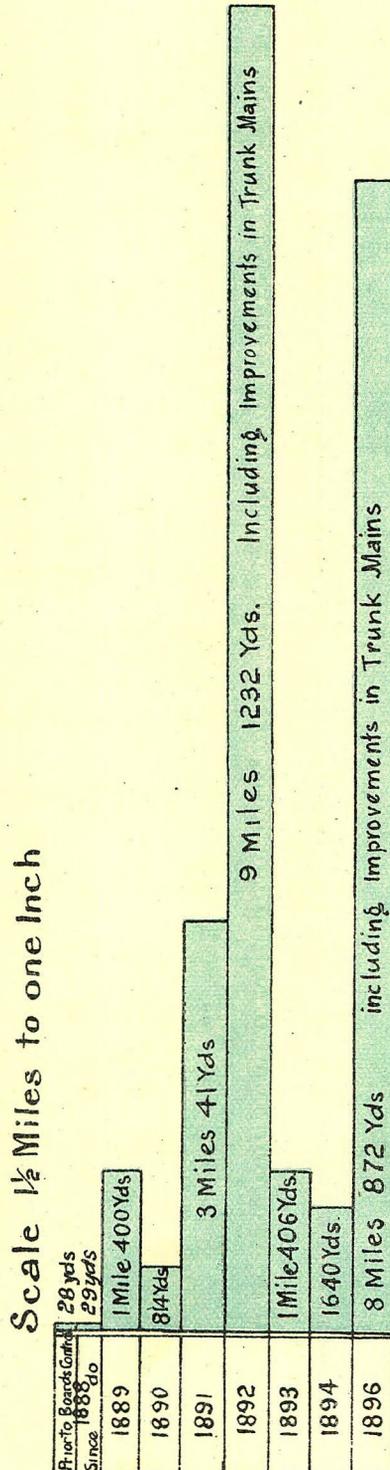


# DIAGRAMS

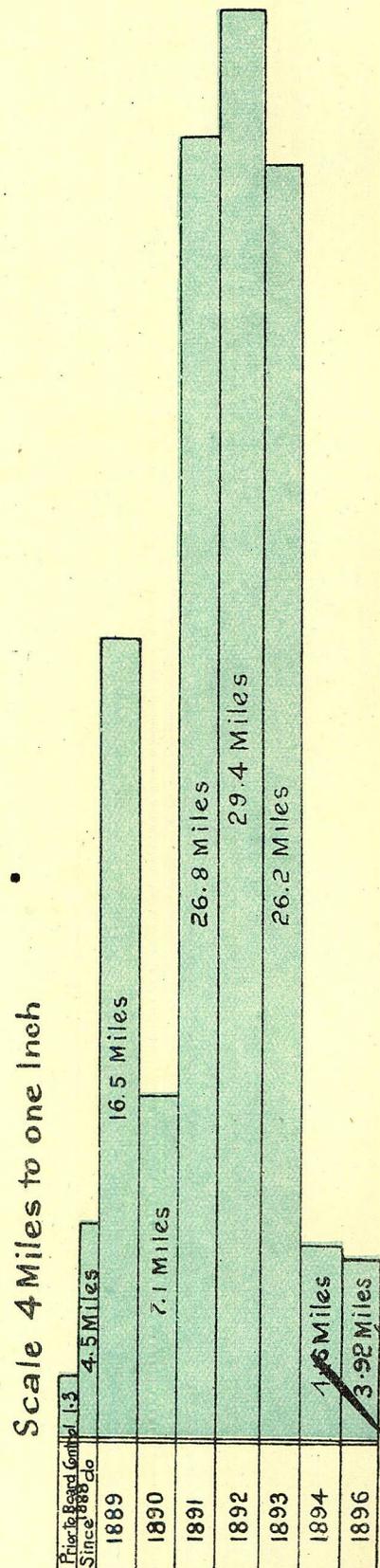
Showing the Total Mileage of Trunk Pumping & Reticulation Mains laid to end of June 1896 also of Mains Removed & Cleaned during each Year from 1888 to 30<sup>th</sup> June 1896



Laid



Removed



Cleaned

*Richard Smith*  
Asst. Eng.

WATER MAIN RETICULATION  
DIAGRAM

Showing Mileage of Water Main Reticulation of the City of Sydney & Suburbs, etc.

Mains laid Prior to the Control of the Board shown in Black

Do. Since Do. Do Do Blue

*J. McCall  
Engineer*

District	0	8	16	24	32	40	48	58	64	72	80	88	96	104	112	120	128	136	144	152	160	178	186	Miles 194	Prior to	Since	Totals			
Alexandria																									4.5	6.84	11.34			
Annandale																										6.3	3.2	9.50		
Ashfield																										7.0	28.19	35.19		
Suburn																											2.47	9.47		
Balmain																										22.1	10.10	32.20		
Botany																											5.43	5.43		
Burwood																										10.0	13.05	23.05		
Camperdown																										7.8	2.23	10.03		
Canterbury																											10.64	10.64		
City of Sydney																										99.5	55.54	155.04		
Concord																										1.0	11.94	12.94		
Darlington																										2.6	.93	3.53		
Drummoyne																											8.87	8.87		
Erskineville																											8.58	8.58		
Erskineville																										4.5	1.19	5.69		
Five Dock																											9.59	9.59		
Glebe																										15.0	7.42	22.42		
Granville																											19.34	19.34		
Hunters Hill																											10.50	10.50		
Hurstville																											24.33	24.33		
Kogarah																											13.70	13.70		
Lane Cove																											8.85	8.85		
Leichhardt																										22.5	10.25	32.75		
Marrickville																										13.6	21.21	34.81		
Mosman																											12.45	12.45		
Newtown																										16.6	9.79	26.39		
North Botany																											8.53	8.53		
North Sydney																										7.8	26.97	34.77		
Raddington																										21.6	6.79	28.39		
Petersham																										13.8	13.11	26.91		
Prospect and Sherwood																											1.79	1.79		
Randwick																										8.8	20.58	29.38		
Redfern																										16.8	8.64	25.44		
Rookwood																											7.73	7.73		
Rockdale																											24.91	24.91		
Ryde																											7.54	7.54		
Smithfield & Eastfield																											3.57	3.57		
St. Peters																										2.25	8.29	10.54		
Strathfield																										3.8	10.52	14.32		
Waterloo																										6.8	6.72	13.52		
Waverley																										12.0	9.67	21.67		
Willoughby																											15.78	15.78		
Woolahra																										11.25	15.63	26.88		
Campbelltown																											5.32	5.32		
Gordon																											18.63	18.63		
Liverpool																											13.12	13.12		
Richmond																										9.0	1.81	10.81		
																												346.9	559.28	906.18

(\* 453-)

*Charles W. ...  
Assist. Engr. in Charge  
1878*

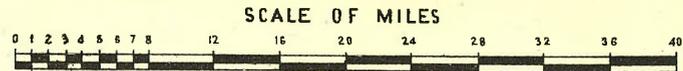
N.B The above does not include Trunk or Pumping Mains or Repairs etc.

# SEWERAGE RETICULATION

## DIAGRAM

Shewing Mileage of Subsidiary Sewers in the City of Sydney and Suburbs

Sewers laid Prior to the Control of the Board shewn in Black  
do Since do do do Green



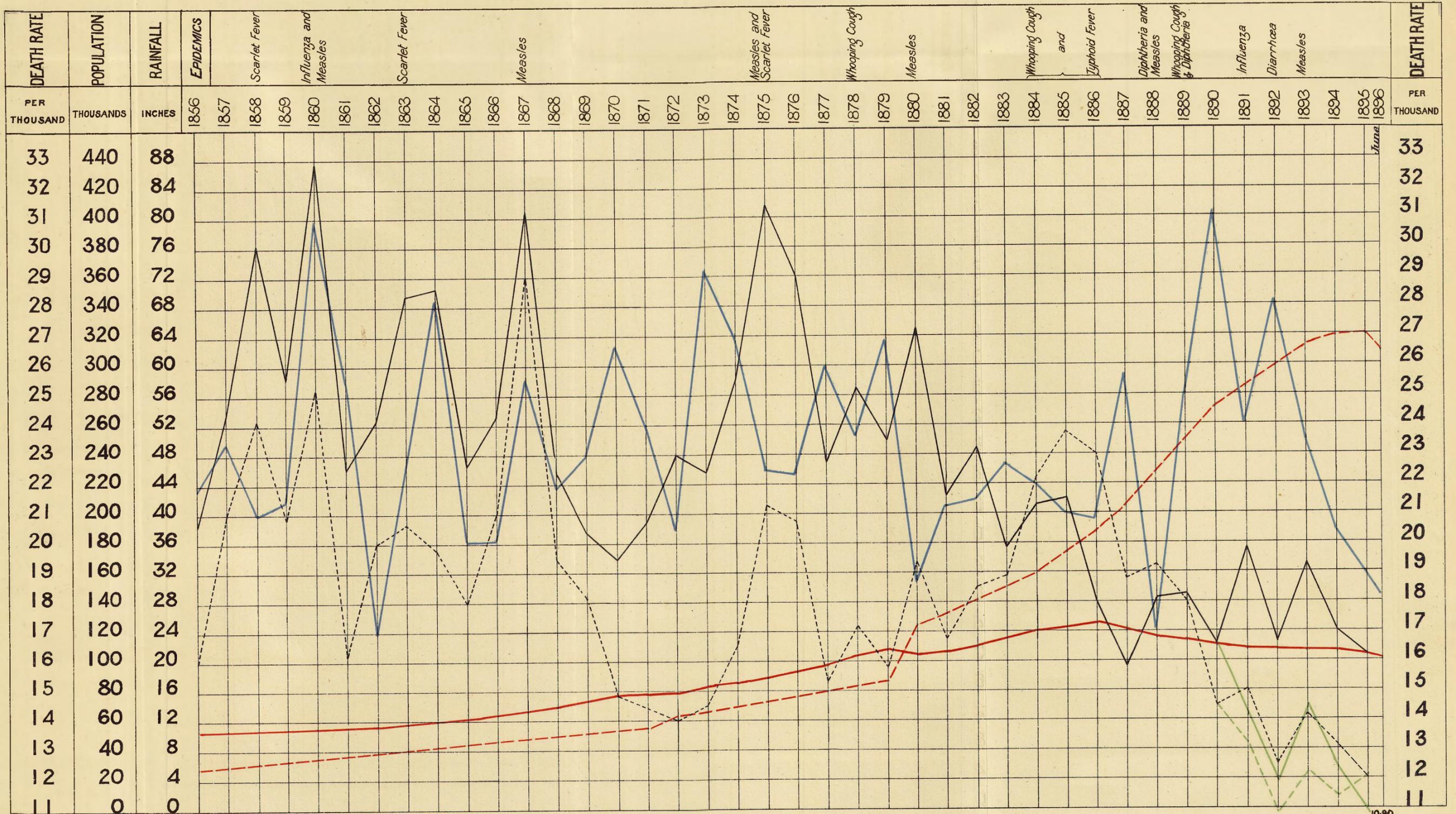
DISTRICT	0	8	16	24	32	40	48	56	64	72	80	88	96	104	112	Prior to Boards Control	Since Boards Control	Totals
Alexandria	1891	1891-1892	1892-1893	1893-1894	1894-1895	1895-1896											8.95	8.95
Camperdown	1892	1892-1893	1893-1894	1894-1895	1895-1896												4.55	4.55
City of Sydney										1890	1890-1891	1891-1892	1892-1893	1893-1894	1894-1895	70.27	5.66	75.93
Darlington																1.90		1.90
Erskineville	1891	1891-1892	1892-1893	1893-1894	1894-1895	1895-1896											6.65	6.65
Clebe	1892	1892-1893	1893-1894	1894-1895	1895-1896												10.12	10.12
Marrickville	1891	1891-1892	1892-1893	1893-1894	1894-1895	1895-1896											1.16	1.16
Newtown	1891	1891-1892	1892-1893	1893-1894	1894-1895	1895-1896											12.11	12.11
North Sydney	1891	1891-1892	1892-1893	1893-1894	1894-1895	1895-1896											3.40	3.40
Paddington*	1891	1891-1892	1892-1893	1893-1894	1894-1895	1895-1896										10.39	4.79	15.18
Petersham	1891	1891-1892	1892-1893	1893-1894	1894-1895	1895-1896											5.36	5.36
Randwick	1891	1891-1892	1892-1893	1893-1894	1894-1895	1895-1896										4.45	4.57	9.02
Redfern*	1891	1891-1892	1892-1893	1893-1894	1894-1895	1895-1896										3.20	7.12	10.32
Waterloo	1890	1890-1891	1891-1892	1892-1893	1893-1894	1894-1895	1895-1896										5.48	5.48
Waverley	1891	1891-1892	1892-1893	1893-1894	1894-1895	1895-1896											9.20	9.20
Woollahra*	1891	1891-1892	1892-1893	1893-1894	1894-1895	1895-1896										3.31	9.19	12.50
<b>Grand Totals of Mileage</b>																93.52	98.31	191.83

\* The whole of the sewers in these Boroughs prior to 1890 were carried out by Government in accordance with the Act

(sig\*453)

*W. P. Griffith*  
Assist. Eng.

# DIAGRAM SHEWING DEATH RATE OF CITY OF SYDNEY AND SUBURBS



——— DEATH RATE IN CITY OF SYDNEY  
 - - - - - " " " SUBURBS  
 ——— POPULATION OF CITY OF SYDNEY  
 - - - - - " " " SUBURBS  
 ——— RAINFALL AT SYDNEY OBSERVATORY  
 ——— DEATH RATE IN CITY } EXCLUSIVE OF HOSPITALS,  
 - - - - - " " " SUBURBS } ASYLUMS, AND GAOLS

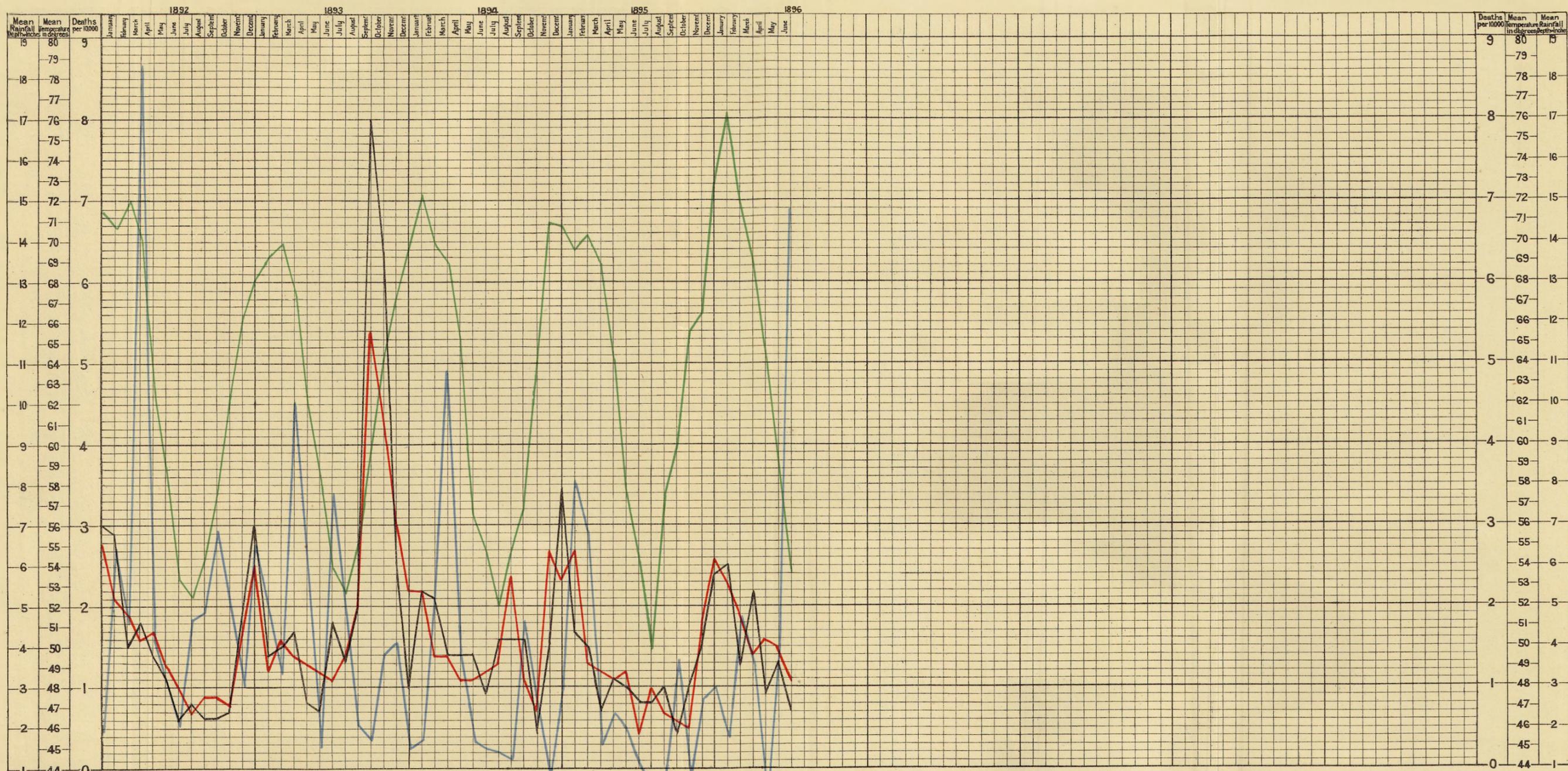
*Spiffitt*  
Assist Eng

(\* 453)

10-90

# Adult and Infantile Zymotic Death rate of the Metropolis

PER 10000 OF THE POPULATION



**NOTES.** The Black line indicates the city rate  
 " Red " " " "suburban"  
 " Blue " " " "rainfall"  
 " Green " " " "temperature"

*Spiffitt  
 Ass't. Secy.*

**DIAGRAM**  
 SHOWING MEANS OF EXTERNAL TEMPERATURE. TEMPERATURE IN SEWERS 10 & 40 FT DEEP  
 AND HUMIDITY FROM THE YEAR 1889.

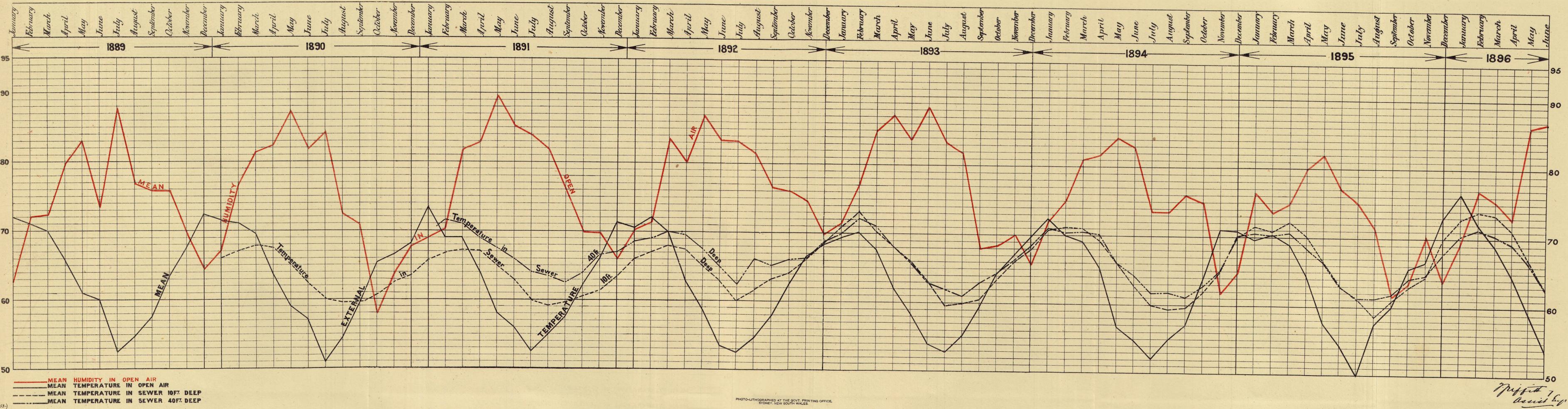


PHOTO-LITHOGRAPHED AT THE GOVT. PRINTING OFFICE, SYDNEY, NEW SOUTH WALES.

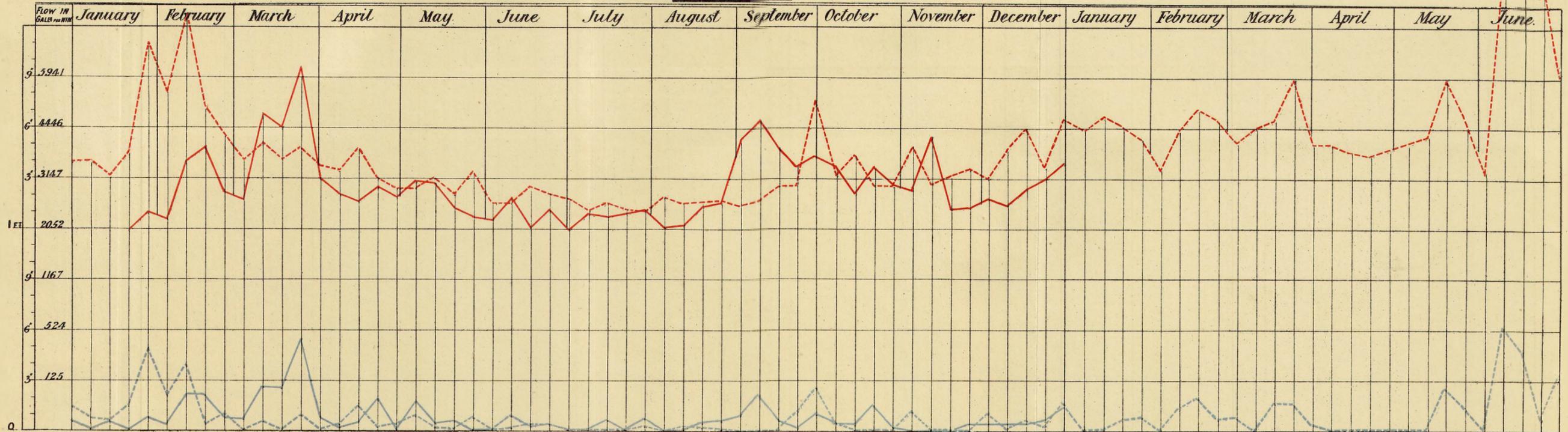
*W. J. Griffith*  
*1896*

# DIAGRAMS SHEWING AVERAGE WEEKLY FLOW FOR

1894 - 95 - 96

## BONDI SEWER

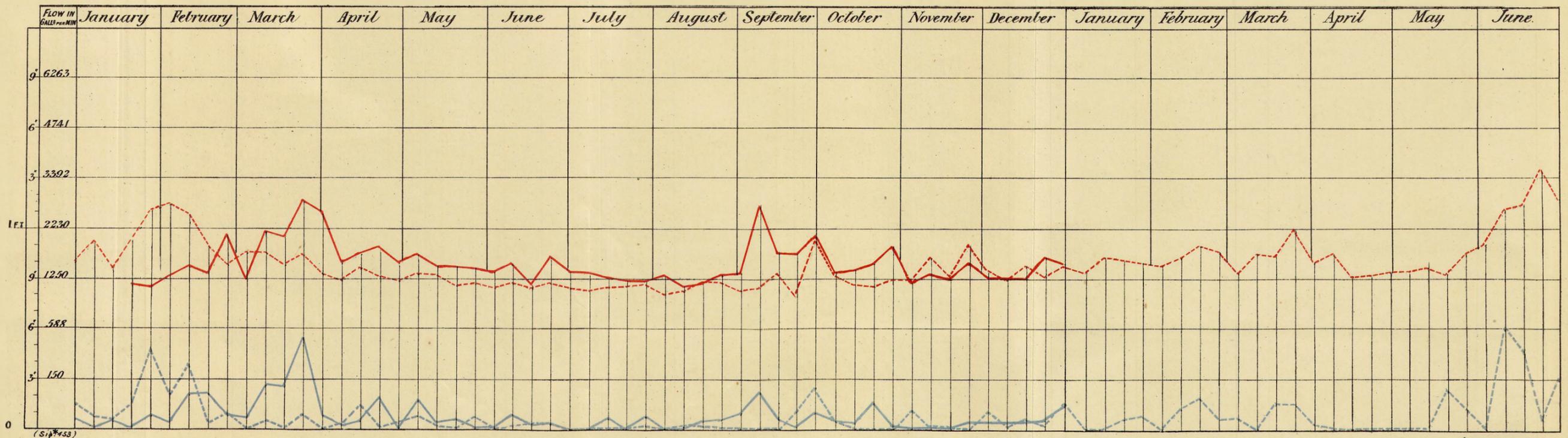
SIZE 8' 2" x 7' 2"



DEPTH OF FLOW IN SEWERS..... 1894-6  
 INCHES OF RAINFALL..... 1894-6

## BOTANY SEWER

SIZE 5' 6" DIAM.



*J. Piffitt*  
*Assist. Eng.*

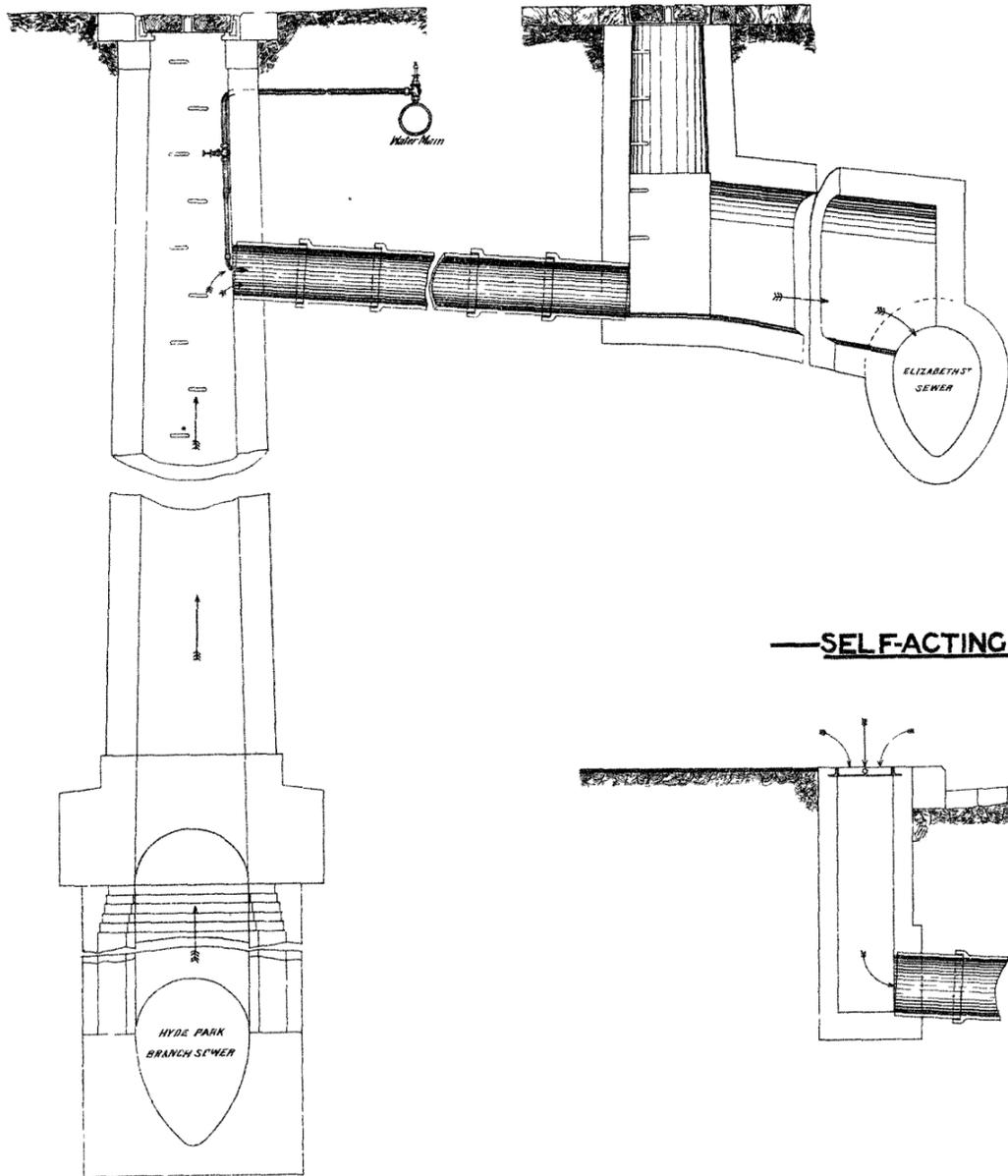
**— PLAN SHEWING THE APPLICATION OF WATER SPRAYS FOR VENTILATING SEWERS —**

SCALE  
1 inch = 10 feet

*McQuinn  
Engineer  
6/1896*

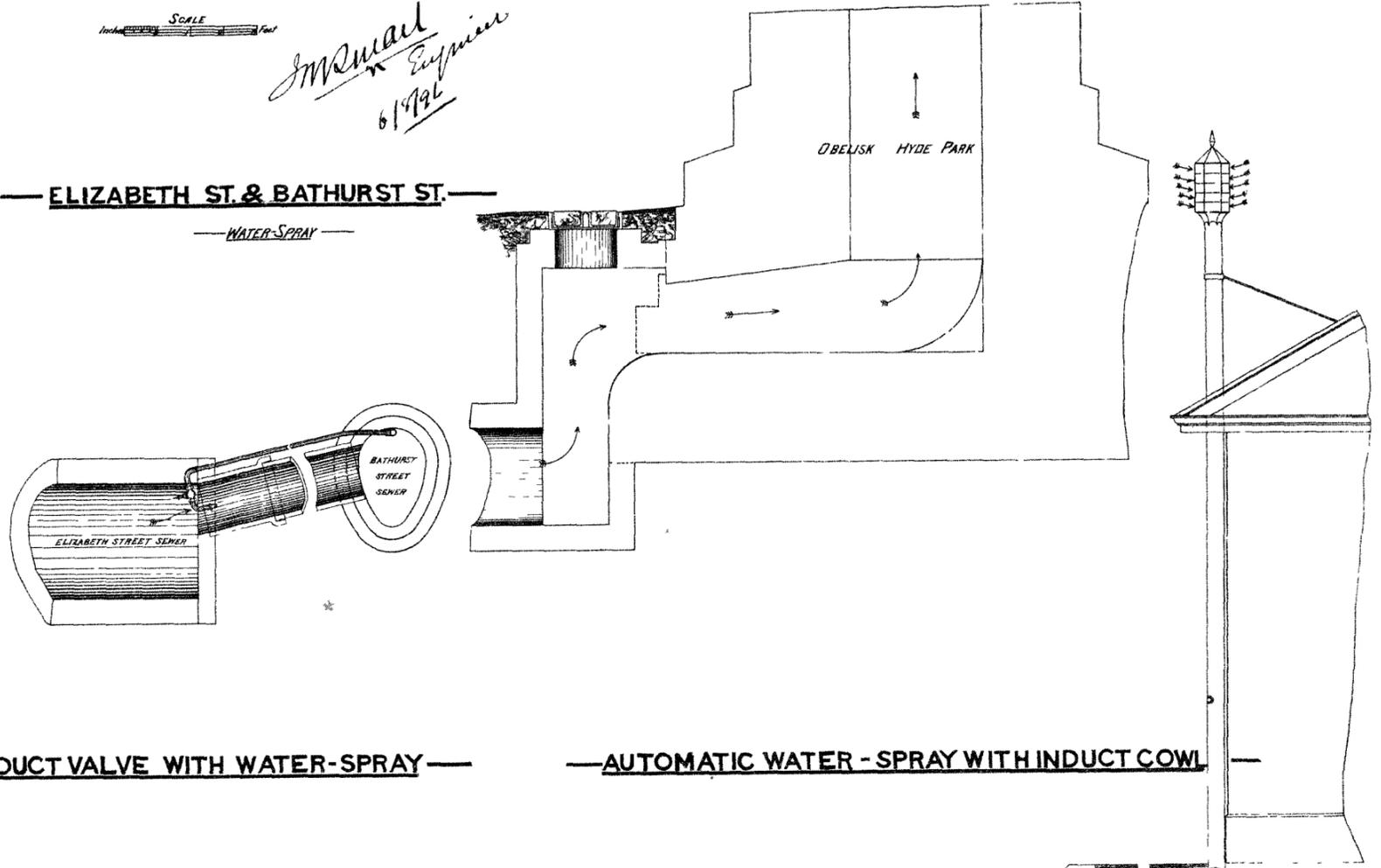
**— ST JAMES RD. & ELIZABETH ST. —**

— WATER-SPRAY —

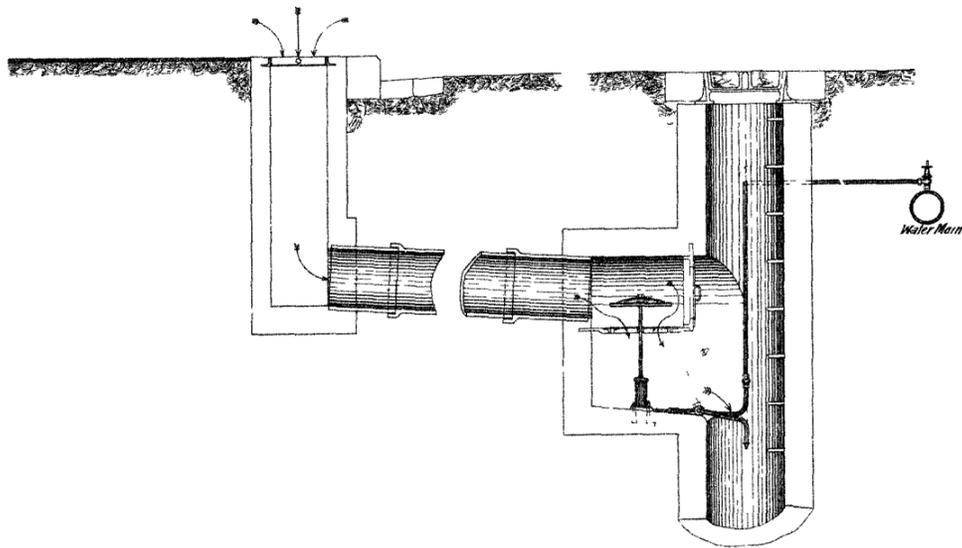


**— ELIZABETH ST. & BATHURST ST. —**

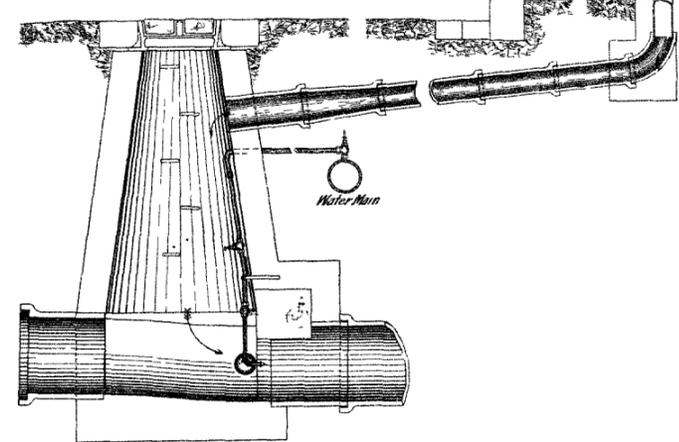
— WATER-SPRAY —



**— SELF-ACTING INDUCT VALVE WITH WATER-SPRAY —**



**— AUTOMATIC WATER-SPRAY WITH INDUCT COWL —**



(453)

PHOTO-GRAPHED AT THE SURVEYING OFFICE  
SYDNEY NEW SOUTH WALES

*W. J. Griffith  
Assist. Eng.  
6/1896*

1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

HUNTER DISTRICT WATER SUPPLY AND SEWERAGE  
BOARD.

(RETURN RESPECTING.)

*Printed under No. 10 Report from Printing Committee, 23 July, 1896.*

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated the 9th July, 1896, That there be laid upon the Table of this House,—

“Copies of all papers in connection with the recent election for a member to sit upon the Hunter River Water Board for the suburban municipalities; also copies of all correspondence that passed between Mr. H. Rushton, one of the candidates, and the Honorable Secretary for Public Works; also between Mr. A. Brown, ex-President of the Board, and the Honorable the Secretary for Public Works.”

(*Mr. Watkins.*)

SCHEDULE.

NO.	PAGE.
1. Minute of Under Secretary for Public Works suggesting appointment of Returning Officer .....	2
2. Under Secretary of Public Works to Mayor of Hamilton asking whether he is willing to act as Returning Officer ...	2
3. Council Clerk, Hamilton, to Under Secretary for Public Works, stating that the Mayor is willing to act as Returning Officer .....	2
4. Minute by the Executive Council approving of Regulations for the Third Election of Members, Hunter District Water Supply and Sewerage Board, and appointing Irvine Keddie, Esq., Mayor of Hamilton, as Returning Officer .....	2
5. Regulations for the conduct of the election .....	3
6. Under Secretary for Public Works to Mayor of Hamilton, intimating appointment as Returning Officer, and forwarding notice for insertion in newspapers, &c. ....	4
7. Irvine Keddie, Esq., to Under Secretary for Public Works stating that Joseph Brown Barclay has been duly elected as Member of the Board, without opposition .....	4
8. Irvine Keddie, Esq., to Under Secretary for Public Works forwarding letter from Mr. H. Rushton, claiming the right to go to the ballot .....	5
9. H. Rushton, Esq., to Irvine Keddie, Esq., respecting his nomination for the position of Member of the Hunter District Water and Sewerage Board, and stating that he claims the right to go to the ballot .....	5
10. Telegram from the Honorable Alexander Brown, President of the Hunter District Water and Sewerage Board, to the Under Secretary for Public Works, pointing out that, if there is to be a contest between Barclay and Rushton, notice must be inserted in local papers .....	5
11. Minute of the Minister for Public Works respecting the reply to be sent to Mr. Brown .....	5
12. The Honorable Alexander Brown to the Secretary for Public Works respecting the reply sent to his telegram .....	5
13. Certificates of Returning Officer, addressed to His Excellency the Governor, that Joseph Brown Barclay has been duly elected as Member of the Hunter District Water and Sewerage Board .....	6
14. Under Secretary for Public Works to the Secretary to the Hunter District Water and Sewerage Board, intimating that a certificate has been received from the Returning Officer to the effect that Joseph Brown Barclay has been duly elected as Member to represent the Boroughs of Pittsburg, New Lambton, and Wallsend, and the Municipal Districts of Adamsdown, Carrington, Wickham, Hamilton, Lambton, Merewether, and Waratah, on the Hunter District Water Supply and Sewerage Board .....	6
15. J. B. Barclay, Esq., to the Under Secretary for Public Works stating that, having been elected, he intends to take his seat on the Board .....	6
16. The Crown Solicitor to the Under Secretary for Public Works returning papers respecting the refusal of the Returning Officer to accept Mr. Rushton's nomination, and stating that the Attorney-General considered the matter to be one for the private solicitor of the parties concerned .....	6

HUNTER DISTRICT WATER SUPPLY AND SEWERAGE BOARD.

No. 1.

Minute by The Under Secretary for Public Works.

Hunter District Water and Sewerage Board Elections.

Department of Public Works, Sydney, 9 May, 1896.

For the purposes of the Hunter District Water and Sewerage Board Elections, which take place on the 30th proximo, it will be necessary to appoint two Returning Officers, one for the City of Newcastle, and one for the Suburban Municipalities. On the previous occasion the Mayor of Newcastle and the Mayor of Hamilton were asked to act in this capacity.

Submitted for instructions.

ROBERT HICKSON,

Under Secretary for Public Works and Commissioner for Roads.

Same officials may be asked to undertake the duty.—J.H.Y., 11/5/96. Write, 11/5/96. The Mayor of Newcastle, the Mayor of Hamilton, the Mayor of Wallsend informed, 12/5/96.

No. 2.

The Under Secretary for Public Works to The Mayor of Hamilton.

Sir,

Department of Public Works, Sydney, 12 May, 1896.

I am directed by the Secretary for Public Works to ask whether you are willing to act as Returning Officer for the purposes of the election on the 30th proximo of a Municipal Member of the Hunter District Water and Sewerage Board, and also whether you will kindly allow the Council Chambers to be used as a polling place as in the case of previous elections.

I am to ask that you will be so good as to favor me with an early reply.

I have, &c.,

R. R. P. HICKSON,

Under Secretary and Commissioner for Roads.

No. 3.

The Council Clerk, Hamilton, to The Under Secretary for Public Works.

Sir,

Municipal Council Chambers, Hamilton, 14 May, 1896.

I have the honor, instructed by His Worship the Mayor of Hamilton, to respectfully acknowledge receipt of your letter of date 12th March, *re* acting as Returning Officer for the purposes of the election on the 30th proximo of a Municipal Member of the Hunter District Water and Sewerage Board, and also for use of Council Chambers as a polling-place, as on previous elections, and in reply I am instructed to state that the Mayor will act as Returning Officer, and that the Council Chambers will be granted as a polling-place, as on previous elections.

I have, &c.,

JAMES RAY,

Council Clerk.

Seen.—R.R.P.H., 18/5/96. Mr. Holliman to note.—J.No. P., 18/5/96. Executive Minute herewith.—19/5/96.

Telegram from the Mayor of Hamilton to The Under Secretary for Public Works.

Hamilton Station.

Will act as Returning Officer Water and Sewerage Board election. Letter was forwarded.

IRVINE KEDDIE,

Mayor.

No. 4.

Minute for the Executive Council.

Subject:—Regulations for the conduct of the Third Election of Members of the Hunter District Water Supply and Sewerage Board.

Department of Public Works, Sydney, 19 May, 1896.

I HAVE the honor to submit for the approval of His Excellency the Governor and Executive Council, the enclosed draft regulations for the conduct of the third election of members of the Hunter District Water and Sewerage Board, which have been prepared in pursuance of the provisions of the Hunter District Water Supply and Sewerage Act of 1892.

I have also to recommend that Irvine Keddie, Esq., Mayor of Hamilton, be appointed to act as Returning Officer in connection with the said election.

J. H. YOUNG.

The Executive Council approve of the Regulations referred to.—ALEX. C. BUDGE, Clerk of the Council. Min. 96-26, 19/5/96. Confirmed, 26/5/96. Approved.—HAMPTON, 19/5/96. Seen.—R.R.P.H., 28/5/96. Mr. Holliman to note.—J.No. P., 28/5/96. Inserted in *Gazette* of 26th May; copy enclosed.—J.W.H.

## No. 5.

## Regulations for the conduct of the Election.

[Published as a Supplement to the *Government Gazette*, Tuesday, 26th May, 1896.]

Department of Public Works, Sydney, 26 May, 1896.

It is hereby notified that His Excellency the Governor, with the advice of the Executive Council, has been pleased to approve of the appointment of

IRVINE KEDDIE, Esquire, Hamilton,

to act as Returning Officer for the purposes of the election, on the 30th proximo, of one member to represent the boroughs of Plattsburg, New Lambton, and Wallsend, and the Municipal Districts of Adamstown, Carrington, Wickham, Hamilton, Lambton, Merewether, and Waratah, on the Hunter District Water Supply and Sewerage Board, in accordance with the provisions of the "Hunter District Water Supply and Sewerage Act of 1892."

J. H. YOUNG.

Department of Public Works, Sydney, 26 May, 1896.

It is hereby notified that His Excellency the Governor, with the advice of the Executive Council, has been pleased to approve of the following Regulations, which have been prepared in accordance with the "Hunter District Water Supply and Sewerage Act of 1892," for the conduct of the third election, on the 30th proximo, of members of the Hunter District Water Supply and Sewerage Board, under the provisions of the before-mentioned Act.

J. H. YOUNG.

THE following Regulations for the conduct of the third election of members of the Hunter District Water Supply and Sewerage Board, have been prepared in pursuance of the provisions of section 42 of the Act 55 Vic. No. 27:—

1. In the event of there being a contested election for any of the members of the Board, the polling shall take place as follows:—

For the election of one member to represent the Municipal Council of the City of Newcastle, at the Town Hall, Newcastle, between the hours of 11 o'clock in the morning and 1 o'clock in the afternoon of the 30th day of June, 1896.

For the election of one member to represent the boroughs of Plattsburg, New Lambton, and Wallsend, and the Municipal Districts of Adamstown, Carrington, Wickham, Hamilton, Lambton, Merewether, and Waratah. At the Council Chambers, Wallsend, for the boroughs of Plattsburg and Wallsend and the Municipal District of Lambton, and at the Council Chambers, Hamilton, for the borough of New Lambton, and the Municipal Districts of Adamstown, Carrington, Wickham, Hamilton, Merewether, and Waratah, between the hours of 8 o'clock in the morning and 4 o'clock in the afternoon of the 30th day of June, 1896.

2. For the convenient and proper conduct of such elections, a roll shall be prepared, showing the names and addresses of the persons entitled by the provisions of the Hunter District Water Supply and Sewerage Act to vote thereat; and such roll shall be duly certified by the respective Returning Officers, and used by them for the purposes of such election: Provided, however, that in the event of any alderman being elected to any of the Municipal Councils, the members of which are entitled by the said Act to vote at the election of members of the said Board, subsequent to the preparation of the said roll, but prior to the date of the said election being held, he shall be entitled to vote thereat upon the production of the *Gazette* notice of his election as alderman, or other satisfactory evidence that he has been duly elected: Provided further, that if the name of any person legally entitled to vote shall have been accidentally omitted from such roll, such omission shall not preclude his voting at such election upon his satisfying the Returning Officer that he is entitled so to vote.

3. Before, and in time for such election, the Returning Officers shall cause to be printed, or to be written, ballot-papers, according to the following form:—

*Third Election for Members of "The Hunter District Water Supply and Sewerage Board."*

Ballot Paper.

Member for (as the case may be).

Polling day, the 30th day of June, 1896.

(Names of Candidates.)

And shall provide as many of such ballot-papers as shall be fully equal to the number of electors entitled to vote.

4. At each polling-place there shall be one or more compartments or ballot rooms, provided with all necessary materials, for the purpose of enabling the electors to mark the ballot-papers, as hereinafter provided; and in each such polling-place no person shall be entitled to be present, other than the Returning Officer, poll clerks, and scrutineers of the several candidates (if any) appointed as hereinafter provided, and the elector who shall at that time be voting.

5. The Returning Officers shall each provide a locked box, of which they shall keep the keys, with a cleft or opening in such box capable of receiving the ballot-papers folded as hereinafter provided, which box shall be open to inspection by such poll clerks and scrutineers on its being locked for receiving the ballot-papers, and such box shall be placed upon the table at which the Returning Officers and scrutineers preside and are placed; and each elector, having previously satisfied the Returning Officer that he is entitled to vote at such election, shall then receive from the Returning Officer or poll clerk one of the ballot-papers initialled by the Returning Officer. At the time of the delivery of such ballot-paper to any elector, the Returning Officer shall, upon a copy of the roll certified by such Returning Officer as before provided, make a mark against the name of such elector, which mark shall be *prima facie* evidence of the identity of such elector with the person whose name shall be so marked upon the roll, and of the fact of his having voted at such election.

6. Every such elector shall, in one of the compartments or ballot rooms provided for the purpose, strike out from the ballot-paper the names of such candidates as he does not intend to vote for, and shall forthwith fold up the same in such manner as will conceal the names of the candidates, and shall deposit it

it in the ballot-box in the presence of the Returning Officer: Provided that while an elector is in the compartment or ballot room, preparing his ballot-paper, no other person shall be allowed in such compartment or ballot room.

7. Every elector may vote for any number of candidates not exceeding the number of members then to be chosen, and any ballot-paper containing a greater number of names of candidates, or without the initials of the Returning Officer, shall be rejected at the close of the poll.

8. Each candidate may appoint one person to be a scrutineer at the polling-place.

9. No inquiry shall be permitted at the time of polling as to the right of any person to vote (unless under the circumstances mentioned in Regulation No. 2) except only as follows—that is to say, the Returning Officer may, if he think fit, or shall, if required by any scrutineer, put to any elector before he shall have voted, and not afterwards, the following question, and no other—that is to say:—

Are you the same person whose name appears as (A.B., No. ) on this roll?

And any person so required to answer the said question shall not be permitted to vote until he shall have satisfactorily answered the same.

10. Each Returning Officer at the close of the poll, in the presence of his poll clerk and of such scrutineers as may attend, shall examine and count the numbers of votes for each candidate at his own polling-place, and shall make and sign a statement of such numbers, which statement shall be countersigned by the poll clerks and scrutineers. The Returning Officers shall thereupon seal up the ballot-papers and transmit them to the Under Secretary for Public Works, who shall safely keep the same for one year after the receipt thereof.

11. As soon as it shall have been ascertained who have been duly elected, the official declaration of the state of the poll shall be openly made by the Returning Officers at the respective polling-places.

12. The Returning Officers may appoint such poll clerks as they may deem necessary for carrying out the duties imposed upon them by these Regulations.

13. The Returning Officer for the election of a member to represent the boroughs of Plattsburg and Wallsend, and the Municipal Districts of Adamstown, Carrington, Wickham, Hamilton, New Lambton, Lambton, Merewether, and Waratah, shall appoint a Deputy Returning Officer to preside at the polling-place at the Council Chambers, Wallsend.

#### No. 6.

#### The Under Secretary for Public Works to The Mayor of Hamilton.

Sir,

Department of Public Works, Sydney, 29 May, 1896.

I have the honor to forward, herewith, a copy of the *Government Gazette* containing the notification of your appointment as Returning Officer in connection with the forthcoming Water and Sewerage Board election, and also copy of the Regulations for the conduct of the election.

I also forward copy of the Hunter District Water and Sewerage Act, and four copies of the draft notice to be issued by you, as required by section 17 of the Act. I shall be glad if you will sign one copy and return it to me at once, in order that it may be inserted in the *Government Gazette* of Tuesday next. Will you also be so good as to take steps to insert the notice, not later than Tuesday, in one or more newspapers circulating in the Newcastle district, as required by the section referred to.

I shall also be glad if you will forward me a list of nominations received by you.

I have, &c.,

R. R. P. HICKSON,

Under Secretary and Commissioner for Roads.

[Enclosure.]

#### HUNTER DISTRICT WATER SUPPLY AND SEWERAGE ACT OF 1892.

NOTICE respecting the Third Election of one Member to represent the Boroughs of Plattsburg, New Lambton, and Wallsend, and the Municipal Districts of Adamstown, Carrington, Wickham, Hamilton, Lambton, Merewether, and Waratah, upon the Hunter District Water Supply and Sewerage Board.

NOTICE is hereby given that the christian and surnames of candidates for the position of Member to represent the above Boroughs and Municipal Districts upon the Hunter District Water Supply and Sewerage Board must be given in writing and signed by a nominator (who must be duly qualified as an elector under the abovenamed Act), and delivered to me at the Council Chambers, Hamilton, within seven days from the date hereof; and in the event of more than one candidate being proposed, the polling will take place as follows:—At the Council Chambers, Wallsend, for the Boroughs of Plattsburg and Wallsend and the Municipal District of Lambton; and at the Council Chambers, Hamilton, for the Borough of New Lambton and the Municipal Districts of Adamstown, Carrington, Wickham, Hamilton, Merewether, and Waratah, between the hours of 8 o'clock in the morning and 4 o'clock in the afternoon of the 30th day of June, 1896.

Any person is eligible for election as Member to represent the said Boroughs and Municipal Districts upon the Board, who, at the time of holding of such election shall possess, in and for the said Boroughs and Municipal Districts, the qualification, and not be within any disqualification respectively prescribed and imposed in respect of the office of Alderman by the "Municipalities Act of 1867," or any Act amending the same.

IRVINE KEDDIE,

Returning Officer.

Hamilton, June, 1896.

#### No. 7.

#### The Returning Officer, Hamilton, to The Under Secretary for Public Works.

Sir,

Municipal Council Chambers, Hamilton, 9 June, 1896.

I have the honor to inform you that Joseph Brown Barclay, of Clyde-street, Newtown, Hamilton, has been nominated as a candidate for the vacancy of a member to represent the Boroughs of Plattsburg, New Lambton, and Wallsend, and the Municipal Districts of Adamstown, Carrington, Wickham, Hamilton, Lambton, Merewether, and Waratah, on the Hunter District Water Supply and Sewerage Board. Also that Henry Rushton, of Wallsend, was also nominated, but received too late, on 9th June, at 12 o'clock noon, therefore Joseph Brown Barclay is duly elected without opposition. I enclose letter and certificate addressed to the Governor certifying that Joseph Brown Barclay has been duly elected to the position of member of the Hunter District Water Supply and Sewerage Board without opposition.

I have, &c.,

IRVINE KEDDIE,

Returning Officer.

Mr.

Mr. Holliman.—Jno. P., 11/6/96.

Certificate has been forwarded to the Governor. I would, however, draw the attention of the Under Secretary to the fact that the Returning Officer appears to have acted wrongly in refusing to receive the nomination of Mr. Rushton. The notice (copy attached) which was published on the 2nd of June required the nominations to be delivered to the Returning Officer within seven days from that date, which would seem to include the whole of the 9th. The Returning Officer, however, appears to have considered the nomination out of time because it was delivered at 12 o'clock noon on that day.—J. W. HOLLIMAN.

For the information of the Minister. This is a matter between Mr. Rushton and the Returning Officer.—R.R.P.H., 12/6/96, Under Secretary for Public Works and Commissioner for Roads.

No. 8.

The Returning Officer, Hamilton, to The Under Secretary for Public Works.

Sir,

Municipal Council Chambers, Hamilton, 11 June, 1896.

I have the honor herewith to forward you letter received from Mr. Henry Rushton, of Wallsend, one of the candidates for a representative of the Hunter District Water Supply and Sewerage Board, claiming that his nomination was handed in in ample time, and claiming the right to go to the ballot.

I may state the reason that I ruled that Mr. Henry Rushton's nomination was received too late is according to section 17 of the Hunter District Water Supply and Sewerage Act of 1892, wherein it states that the names of all candidates must be forwarded to the Returning Officer within seven days of the giving of such notice. The notice calling for nominations was dated 1st June, and appeared in the *Newcastle Herald* newspaper on the 2nd June, therefore all nominations according to the Act were due on Monday, the 8th June, 1896, at 12 o'clock p.m.

Awaiting any further instructions in regard to the matter,—will forward nomination papers on if required.

I have, &c.,

IRVINE KEDDIE,  
Returning Officer.

No. 9.

Mr. H. Rushton to The Returning Officer, Hamilton.

Sir,

Wallsend, 11 June, 1896.

Referring to my nomination for the position of member to represent the Suburban Council on the Hunter District Water Supply and Sewerage Board, and to your conversation with me this morning when you informed me that you had sent on my nomination with another to the Under Secretary for Works, but that you are of the opinion that my nomination paper was lodged too late, I beg respectfully to repeat my contention that such is not the case, and further that I claim the right to go to the ballot.

I beg to refer you to the provisions of section 11 of the Acts Shortening Act, 22<sup>d</sup> Victoria No. 12.

Will you be good enough to transmit this letter or a copy of the same to the Under Secretary at once, so that he may consider it with the papers now before him.

Yours, &c.,

HENRY RUSHTON.

According to my reading of the Act the Returning Officer was wrong, but I see nothing in the Act to warrant the Department interfering in the matter. It might perhaps be as well to refer the matter to the Crown Solicitor.—R.R.P.H., 12/6/96.

No. 10.

Telegram from Mr. A. Brown to The Under Secretary for Public Works.

Newcastle Station.

If there is to be contest for suburban municipal seat, between Rushton and Barclay, advertisements must appear, in accordance with 17th section, in local papers here not later than to-morrow's issue.

ALEX. BROWN,

President, H.D.W.S. & S.

No. 11.

Minute by The Under Secretary for Public Works.

SAY the matter is not now in our hands. We only appointed the Returning Officer.

J.H.Y., 22/6/96.

Telegraph.—22/6/96.

Wire sent.—22/6/96.

No. 12.

Mr. A. Brown to The Under Secretary for Public Works.

Newcastle, 23 June, 1896.

Dear Sir,

All I can say in response to your telegram that the matter is now out of your hands, and all your Department had to do was to make the appointment, is that it is one of the most flimsy answers ever made to an important communication. The Returning Officer was your appointment, and you are as much responsible for his actions as you would be for the deficiencies of any officer in your Department; and when you can repair his errors by the exercise of a little intelligence I take it that it is your business to do it. As the matter stands now you are doing a grave injustice to a candidate, who in a contest

contest for the seat would, I think, be returned; but your officer having sent in a certificate, in defiance of all law, declaring a certain person elected, you propose to let the matter stand at this, and compel his opponent to seek redress in the law courts, which the exercise of a little judgment would avoid. I shall certainly have the matter ventilated in Parliament, and chance the Minister's patronage for the Presidency.

Yours, &c.,

ALEXANDER BROWN.

Submitted.—R.R.P.H., 24/6/96. Need not be replied to.—J.H.Y., 24/6/96.

### No. 13.

The Returning Officer, Hamilton, to His Excellency the Governor.

Municipal Council Chambers, Hamilton, 9 June, 1896.

THIRD election, Hunter District Water Supply and Sewerage Act of 1892, of one member to represent the Boroughs Plattsburg, New Lambton, and Wallsend, and the municipal districts of Adamstown, Carrington, Wickham, Hamilton, Lambton, Merewether, and Waratah.

I HEREBY certify that Joseph Brown Barclay has been duly elected as a member for the abovenamed boroughs and municipal districts, Hunter District Water Supply and Sewerage Act, 1892, without opposition.

IRVINE KEDDIE,

Returning Officer.

The Chief Secretary.—HAMPDEN, 15/6/96. The Under Secretary for Public Works and Commissioner for Roads.—C.W., 19/6/96. B.C. Gazette and Inform Board.—R.R.P.H., 2/7/96. Done, 2/7/96. Put with papers. Mr. Holliman.—Jno. P., 20/6/96.

### No. 14.

The Under Secretary for Public Works to The Secretary, Hunter District Water Supply and Sewerage Board.

Sir,

2 July, 1896.

I am directed to inform you that a certificate has been received from Irvine Keddie, Esq., the Returning Officer appointed to conduct the election of a member to represent the boroughs of Plattsburg, New Lambton, and Wallsend, and the municipal districts of Adamstown, Carrington, Wickham, Hamilton, Lambton, Merewether, and Waratah, on the Hunter District Water Supply and Sewerage Board, under the provisions of the Hunter District Water Supply and Sewerage Act, 1892, to the effect that Joseph Brown Barclay has been duly elected without opposition.

I have, &c.,

R. R. P. HICKSON,

Under Secretary and Commissioner for Roads.

### No. 15.

Mr. J. B. Barclay to The Under Secretary for Public Works.

Dear Sir,

Hamilton, Clyde-street, 12 June, 1896.

Having been informed to-day that a protest has been lodged by H. Rushton against my election by Returning Officer, as the only nomination received by Returning Officer in accordance with the Act, and acting under legal advice I intend taking my seat as a member of the Hunter District Water and Sewerage Board, therefore, having been elected as member by Returning Officer. Mr. H. Rushton if not satisfied has his remedy at law, and as pointed out by my legal adviser, the Act is clear and conclusive on the course adopted by Returning Officer, and I am now very pleased that Returning Officer had his duty so clearly pointed out by yourself and Mr. Norrie on the 4th instant.

I have, &c.,

J. B. BARCLAY.

### No. 16.

The Crown Solicitor to The Under Secretary for Public Works.

Sir,

Crown Solicitor's Office, Sydney, 17 June, 1896.

I have the honor to return herewith the papers numbered as in margin, referring to the refusal of the Returning Officer to accept Mr. Henry Rushton's nomination as a candidate for election on the Hunter District Water Supply and Sewerage Board, and to inform you that the Attorney-General considers this is a matter for the private solicitor of the parties and is not a subject for the Crown Solicitor.

I have, &c.,

GEO. COLQUHOUN,

Crown Solicitor.

Seen. File.—R.R.P.H., 19/6/96.

1896.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

## HUNTER DISTRICT WATER SUPPLY AND SEWERAGE ACT AMENDMENT BILL.

PETITION FROM CERTAIN PROPERTY-OWNERS AND RESIDENTS OF LOUTH PARK, OAKHAMPTON, BOLWARRA, MIDLORN, GLENARVON, LIDDESDALE, AND ADJACENT FARMING LOCALITIES NEAR MAITLAND, AGAINST CLAUSE SIX OF.)

*Received by the Legislative Assembly, 8 July, 1896.*

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the property-owners and residents of Louth Park, Oakhampton, Bolwarra, Midlorn, Glenarvon, Liddesdale, and adjacent farming localities near Maitland,—

SHOWETH AS FOLLOWS:—

1. That a Bill to amend the "Hunter District Water Supply and Sewerage Act of 1892, the Country Towns and Hunter District Water Supply and Sewerage Acts Amendment Act of 1894, and for other purposes," is now under consideration by your Honorable House.

2. That your Petitioners will be most seriously affected by the clause in the said Bill which extends the distance in respect of which property may be rated for the purposes of the said water supply to four hundred and forty yards from the water-pipes of the Board.

3. That your Petitioners consider the present limit of distance from such pipes, viz., sixty yards, quite sufficient for all necessary purposes.

4. That your Petitioners are compelled at a very great outlay to maintain embankments to protect their farms from inundation by flood-waters, and the imposition of a tax for water supply purposes would entail great hardship upon them, as they are already supplied with water for all necessary purposes.

5. That your Petitioners never asked for the extension of the water supply to their farms, and never for a moment anticipated that they would be liable to taxation for water supply purposes, otherwise they would have strenuously opposed the passing of the said Acts.

6. That having regard to the great losses which they have sustained by reason of floods, necessitating in many cases appeals to the Government for assistance, your Petitioners feel very strongly that they should not be harassed by taxation of this nature.

Your Petitioners, therefore, humbly pray that the above-mentioned clause may be omitted from the said Bill, or if inserted therein, that your Petitioners may be exempted from the operation of the same.

And your Petitioners, as in duty bound, will ever pray, &c.

*[Here follow 77 signatures.]*

A similar Petition was received,—

On 8th July, from certain property-owners and residents of the same localities; 68 signatures.

1000

1000

1000

1000

1000

1896.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

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## HUNTER DISTRICT WATER SUPPLY AND SEWERAGE ACT AMENDMENT BILL.

(PETITION FROM THE MAYOR AND ALDERMEN OF THE BOROUGH OF MORPETH IN FAVOUR OF  
AN AMENDMENT OF.)

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*Received by the Legislative Assembly, 29 July, 1896.*

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To the Honorable the Speaker and Members of the Legislative Assembly.

The Petition of the Mayor and Aldermen of the Borough of Morpeth,—

HUMBLY SHOWETH:—

1. That the provisions contained in clause 6 of the proposed Hunter District Water Supply and Sewerage Act Amendment Act, whereby the distance of 60 yards in the Principal Act is made to extend to 440 yards, are calculated to work great injury to and hardships upon the agricultural portions of the Borough, and on such lands therein as are used for grazing purposes only, and would enable the Board to lay unnecessary mains simply as a means of largely increasing their revenue. And your Petitioners therefore suggest that as far as such lands are concerned the distance should be limited to 110 yards.

2. That the minimum rate of 10s., as provided by clause 15, sub-section (a), has an unequal effect upon the taxpayers of the Borough, and makes the holders of small and comparatively useless areas pay in proportion a much larger sum in the way of tax than those whose holdings may fairly be rated at that amount, and your Petitioners, in order to equalise the taxation, would ask that the section should be amended by reducing the minimum to 2s. 6d.

3. That the provisions contained in clause 33 of the said amending Act, whereby a mortgagor is bound to disclose the name of his mortgagee, are inquisitorial in the extreme. A mortgage upon a taxable area does not change the ownership thereof, and whilst for purposes of ownership or occupancy the names of the purchasers and lessees may fairly be asked for, that of mortgagees, can, without any benefit to the Board, disclose only the financial position of the taxpayer.

Your Petitioners therefore pray that all references to mortgages may be omitted.

And your Petitioners, as in duty bound, will ever humbly pray.

*[Here follow 9 signatures.]*

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1896.

NEW SOUTH WALES.

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PARLIAMENTARY STANDING COMMITTEE ON  
PUBLIC WORKS.

---

R E P O R T

TOGETHER WITH

MINUTES OF EVIDENCE, APPENDICES, AND PLAN,

RELATING TO THE

PROPOSED WATER SUPPLY

FOR THE

TOWN OF TAMWORTH.

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Presented to Parliament in accordance with the provisions of the Public Works Act,  
51 Vic. No. 37.

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SYDNEY: CHARLES POTTER, GOVERNMENT PRINTER, PHILLIP-STREET.



## MEMBERS OF THE COMMITTEE.

## LEGISLATIVE COUNCIL.

The Honorable FREDERICK THOMAS HUMPHREY, Vice-Chairman.  
 The Honorable JOHN DAVIES, C.M.G.  
 The Honorable JAMES HOSKINS.  
 The Honorable CHARLES JAMES ROBERTS, C.M.G.  
 The Honorable WILLIAM JOSEPH TRICKETT.

## LEGISLATIVE ASSEMBLY.

THOMAS THOMSON EWING, Esquire, Chairman.  
 HENRY CLARKE, Esquire.  
 CHARLES ALFRED LEE, Esquire.  
 JOHN LIONEL FEGAN, Esquire.  
 ANGUS CAMERON, Esquire.  
 THOMAS HENRY HASSALL, Esquire.  
 GEORGE BLACK, Esquire.  
 FRANCIS AUGUSTUS WRIGHT, Esquire.

## MEMBERS OF THE SECTIONAL COMMITTEE.

THOMAS THOMSON EWING, Esquire, Chairman.  
 The Honorable JOHN DAVIES, C.M.G.  
 CHARLES ALFRED LEE, Esquire.  
 JOHN LIONEL FEGAN, Esquire.  
 FRANCIS AUGUSTUS WRIGHT, Esquire.

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

WATER SUPPLY FOR THE TOWN OF TAMWORTH.

REPORT.

THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS, appointed during the first Session of the present Parliament, under the Public Works Act of 1888, 51 Vic. No. 37, the Public Works Act Amendment Act of 1889, 52 Vic. No. 26, and the Public Works (Committees' Remuneration) Act of 1889, 53 Vic. No. 11, to whom was referred the duty of considering and reporting upon "the expediency of constructing Works of Water Supply for the Town of Tamworth, in lieu of the scheme already approved by the said Committee and authorised by Parliament," have, after due inquiry, resolved that it is expedient the proposed works should be constructed, but that the capacity of the storage reservoir should be increased from 35,000,000 to 50,000,000 gallons; and, in accordance with the provision of subsection IV, of clause 13, of the Public Works Act, report their resolution to the Legislative Assembly:—

1. The proposed work as placed before the Committee is a gravitation scheme. It is proposed to construct a concrete dam, 360 feet in length, with a maximum height of 32 feet, across Moore Creek, near the head, which will impound about 35,000,000 gallons of water at a height of about 1,000 feet above the town. The catchment above the dam is about 22 square miles in area. It was intended to convey the water a distance of about  $11\frac{1}{2}$  miles by steel pipes, 6 inches in diameter, to a concrete service reservoir holding 500,000 gallons, situated about  $1\frac{2}{3}$  of a mile from the centre of the town, and at a height of about 250 feet above the main street. The present population of Tamworth is estimated at 5,100; the proposed works will be capable of supplying a population of 10,000, as provided for in the pumping scheme. The fall in the main pipe-line (63·6 feet per mile) is so great that it will be possible, by using a 7-inch pipe, to utilise the surplus head for generating electricity for lighting or other purposes should the Council desire to do so. In designing the works the Department therefore propose to make provision accordingly. The reticulation pipes provided for the pumping scheme previously before the Committee will be used, with some slight alterations necessitated by the change of the service reservoir site and additions to reach some recently-built houses. Thirty-three acres of land will have to be resumed for the storage reservoir, and the main pipe-line will pass through about 5 miles of private land.

Official description of the proposed work.

2. It is estimated that the scheme will cost £32,824, the estimate comprising the following items:—

Storage reservoir, 35,000,000 gallons .. .. .	£5,311	19	0
Main pipe-line, 6-inch ... .. .	8,628	5	0
Service reservoir ... .. .	1,665	7	6
Service main and reticulation ... .. .	14,151	14	6
Engineering and contingencies ... .. .	2,976	14	0
Land ... .. .	90	0	0
Total ... .. .	£32,824	0	0
Add for providing a 7-inch pipe instead of 6-inch for the purposes of electric power ... .. .	2,550	0	0
Grand Total ... .. .	£35,374	0	0

Estimated cost.

Reasons for  
the present  
inquiry.

3. The proposal for constructing works of water supply for this town was under the consideration of a previous Committee during the months of October, November, and December, 1892. The scheme then submitted by the Department was a pumping scheme, it being proposed to obtain the water from a well sunk in the river-drift immediately above the confluence of the Peel and Cockburn Rivers. The question as to whether a gravitation supply could not be obtained was considered by the Committee upon that occasion, and inquiry was made as to the merits of the gravitation scheme proposed by Mr. F. B. Gipps, C.E. It was found, however, that there were serious objections to that scheme, which precluded its adoption, and the then Engineer-in-Chief for Harbours and Rivers stated to the Committee that a proper gravitation scheme could not be obtained at a less cost than £50,000, as against £22,000, the cost of the pumping scheme then proposed. The local Borough Council admitted the soundness of the objections raised to Mr. Gipps' scheme, and, though they were in favour of a gravitation supply, they accepted the proposal of the Department, as it appeared that a better scheme could not, without going to much greater expense, be obtained. As the result of their inquiry, the Committee then came to the conclusion that the pumping scheme should be carried out, but they recommended that before any of the permanent works were undertaken a thorough test with temporary pumping machinery should be made to prove the quantity of water in the drift whence it was proposed to take the supply. This recommendation of the Committee, together with the difficulties which had in the meantime arisen in regard to the works at Cootamundra and Parkes, which were similar to those proposed for Tamworth, led to the further consideration of the whole matter by the Department of Public Works, and it was decided that before taking further steps in regard to the pumping scheme a careful exploration should be made of the mountain ranges in the neighbourhood, in order to ascertain beyond doubt the possibility of obtaining a gravitation scheme at a reasonable cost. Mr. E. B. Price was the officer selected to carry out the investigation, and his inquiries resulted in the present scheme being placed before the Committee.

The Commit-  
tee's inquiry.

4. After obtaining from the Under Secretary for Public Works a general statement of the circumstances which led to the reconsideration of the matter, and examining Mr. Hickson, the Engineer-in-Chief for Public Works, Mr. E. B. Price, M.I.C.E., and Mr. J. Davis, M.I.C.E., the officers intimately concerned with the designing of the new scheme, and also Mr. F. B. Gipps, who submitted a modification of his previous scheme, a Sectional Committee was appointed to visit Tamworth for the purpose of inspecting and to take evidence. They devoted considerable time to inspecting the pipe-line service and storage reservoirs and catchment area of the proposed water supply and the main features of the modified scheme proposed by Mr. Gipps. They examined the Mayor, two of the aldermen, and the District Surveyor, and received such evidence from ratepayers as was forthcoming.

The evidence.

5. The evidence received by the Committee is, on the whole, very favourable to the scheme. The Mayor and one of the aldermen who were examined by the Sectional Committee expressed the opinion that the Departmental scheme was by far the best of the several proposals which had been from time to time under the notice of the local authorities; and referring to the sentiment of the ratepayers, the Mayor doubted whether more than two persons in the town would be found opposed to the proposed works, and these persons, he pointed out, would probably be found opposed to any scheme of water supply. He, however, thought the capacity of the proposed storage reservoir was insufficient, and should be increased to at least 50,000,000 gallons, and also that the service reservoir should be enlarged to provide for a week's instead of a three days' supply. Mr. Poate, the District Surveyor, was also of opinion that the capacity of the storage reservoir should be not less than 50,000,000 gallons. The municipal authorities stated that the town was in a good financial position and well able to bear the cost of the scheme. It was estimated that the revenue from the works, including a general rate of 1s. in the £, would be, approximately, £2,300. The power generated by the scheme could, it was stated, be readily utilised in the town for various purposes. Mr. Poate recommended that the Crown land within the catchment area should be at once resumed, and that such power as the Government had upon the conversion of the conditional lease land into conditional purchase land should be exercised in order to provide for any probable extension of the storage reservoirs.

6. The witnesses were agreed as to the purity of the water in the creek from whence it was proposed to take the supply. The Under Secretary for Public Works submitted to the Committee an analysis from Mr. Hamlet, the Government Analyst, in which the water was described as being exceptionally good. The Mayor also handed in an analysis made at his brewery, by Mr. Daniell, a chemist, which confirmed this. Purity of the supply.

7. There can be little doubt, in the opinion of the Committee, as to the sufficiency of the supply. Though it is admitted that Moore Creek may, in exceptional seasons, become dry, the supply provided by the catchment area will be more than ample. Taking a minimum annual rainfall of 18 inches, the average being from 29 to 30 inches, and assuming that only 4 inches, or less than 25 per cent., would reach the drainage centre, the District Surveyor calculates this would amount to 1,120,000,000 gallons, or sufficient to fill the storage reservoir thirty times over. The Chief Engineer for Water Conservation and the officers of the Public Works Department confirm this evidence. The local witnesses examined are also satisfied on the point. Sufficiency of the supply.

8. The estimate of the probable revenue furnished by the Department, and the accuracy of which was confirmed by the Mayor, is as follows:— Financial aspect of the scheme.

General rate of 1s. in the £	...	...	...	...	£1,490	0	0
Public buildings and departments	...	...	...	...	240	0	0
Meter accounts—excess over rates	...	...	...	...	215	0	0
Irrigation (gardens, &c.), 60 at £2 10s.	...	...	...	...	150	0	0
Live stock, horses—at 5s. per head	...	...	...	...	50	0	0
Cows—at 5s.	...	...	...	...	25	0	0
Contribution from lighting rate, on account of motive power supplied	...	...	...	...	150	0	0
Total revenue	...	...	...	...	£2,320	0	0

The estimated annual expenses are as follows:—

Amount required to meet the annual payments on account of interest and sinking fund	...	...	...	...	£1,280	0	0
Working expenses	...	...	...	...	200	0	0
					£1,480	0	0

showing an estimated annual surplus of £840. In addition to this, it appears that a saving of £70 per annum will be effected by using the power for the working of the present electric light plant, thus increasing the surplus to £910 per annum.

9. Mr. Gipps appeared before the Committee to give evidence in regard to certain modifications he proposed in his original scheme which was the subject of inquiry when the question was before the previous Committee. From the evidence taken it would seem that the objections already raised to this scheme in the main still hold good. Although the catchment area of, and therefore the flow of water in, the Cockburn River, whence Mr. Gipps proposed to obtain the supply, is larger than that of Moore Creek, the scheme is undesirable for various reasons, the most important of which is that it does not provide sufficient head to supply the reasonably accessible higher land within the municipality, and if it were adopted a pumping service would eventually have to be incorporated with it. The distance of the service reservoir from the centre of the town, viz., 5 miles, and the greater cost of the scheme, also constitute serious objections. Scheme proposed by Mr. Gipps.

10. The site for the storage reservoir appears to have been wisely chosen, but great care should, the Committee think, be exercised by the Department to ensure that on the southern side the dam finds its resting-place upon the solid rock, as boulders might possibly be mistaken for it at this point. At a distance of about a mile above this site is another excellent site, where, if the storage proposed were found to be insufficient, an equal supply could be impounded, which could be delivered, without an additional pipe-line, from the upper to the lower reservoir. With regard to the quantity of water to be stored, the Committee are of opinion that this should not be less than 50,000,000 gallons, which is more than a year's supply, at the ordinary rate of consumption, for a town larger than Tamworth. The extra cost involved by this will be £2,148, and will increase the amount of annual repayment by £77 12s.; but the Committee think this additional expenditure is well warranted. Storage reservoir.

Service  
reservoir.

11. The Committee had under consideration the question of increasing the capacity of the service reservoir, and the matter was inquired into at some length. The scheme provides for a three days' supply, which the engineers consider to be amply sufficient, as any accident to the pipe-line could be repaired within twenty-four hours. It is pointed out that the Sydney water supply service reservoirs at present scarcely hold one day's supply, and that when the additional service reservoirs now being constructed are completed the provision will be only about equal to two days' supply. A majority of the Committee, therefore, came to the conclusion that the capacity of the reservoir as proposed is sufficient for the present needs of the town.

Resumption  
of land at the  
site of the  
proposed  
reservoir.  
Decision of  
the Com-  
mittee.

12. It is proposed in the Departmental scheme that an area of 33 acres should be resumed at the site of the storage reservoir, but the Committee consider that at least 50 acres should be resumed. In the opinion of the Committee the land is of nominal value only.

13. The Committee recommend that the amended scheme proposed by the Department should be carried out with the following provisos:—

- (1.) That the capacity of the storage reservoir should be increased to 50,000,000 gallons.
- (2.) That the present Crown lands within the catchment area of the proposed supply should be at once reserved, and that the Department of Lands, in measuring lands held under conditional lease, should exercise their power under the law to excise those portions required for the present or probable future storage.
- (3.) That the first impounding dam should be constructed, in view of the contingency of the construction of a second dam at some future period, and that in connection with the dam at present proposed, ample provision should be made to obviate any reduction of its capacity by the accumulation of sand.
- (4.) That an area of not less than 50 acres be resumed at the site of the proposed storage reservoir.

Resolution  
of the  
Committee.

14. The resolution passed by the Committee is shown by the following extract from the Minutes of Proceedings of 24th January, 1896:—

“The adjourned debate upon Mr. Humphery's motion,—

‘That the Committee consider it expedient that the proposed Water Supply for the Town of Tamworth, as referred to the Committee by the Legislative Assembly, be carried out, but they recommend that the capacity of the storage reservoir be increased from 35,000,000 to 50,000,000 gallons.’

Upon which Mr. Lee had moved as an amendment,—

“That the motion be amended by the addition of the words ‘and the capacity of the service reservoir to 1,000,000 gallons,’—

was resumed.

Upon the question,—“That the motion be amended by the addition of the words ‘and the capacity of the service reservoir to 1,000,000 gallons,’—the Committee divided as follows:—

Ayes, 4.

Mr. Davies,  
Mr. Hoskins,  
Mr. Clarke,  
Mr. Lee.

Noes, 5.

Mr. Ewing,  
Mr. Humphery,  
Mr. Fegan,  
Mr. Black,  
Mr. Wright.

The motion was then passed.”

THOS. EWING,  
Chairman.

Office of the Parliamentary Standing Committee on Public Works,  
Sydney, 30th January, 1896.

# PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

## MINUTES OF EVIDENCE.

### WATER SUPPLY FOR THE TOWN OF TAMWORTH.

TUESDAY, 17 DECEMBER, 1895.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHREY.

The Hon. JOHN DAVIES, C.M.G.

The Hon. JAMES HOSKINS.

The Hon. CHARLES JAMES ROBERTS, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.

JOHN LIONEL FEGAN, Esq.

ANGUS CAMERON, Esq.

THOMAS HENRY HASSALL, Esq.

GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee proceeded to consider the proposed Water Supply for the Town of Tamworth.

Joseph Barling, Esq., Under Secretary for Public Works, sworn, and examined:—

1. *Chairman.*] I suppose you would like to make a statement to the Committee? Before I give a description of the proposal which I desire to put before you, perhaps it would be desirable that I should give you a short account of the circumstances which led up to the change in the scheme which we propose to carry out at Tamworth. You are aware that some six months ago we effected a reorganisation of the Public Works Department, and one of the changes which took place in connection with the reorganisation was that Mr. Darley took charge of the Water and Sewerage Board, and also of matters in connection with the construction of the sewerage of the city, which previously had been in the hands of Mr. Hickson, Mr. Hickson, on the other hand, taking up a great deal of the work which Mr. Darley had been accustomed to supervise. On Mr. Hickson taking charge of the combined work, this question of carrying out the supply of water to Tamworth came under his consideration, and, in looking at the report of the Committee, which was dated December, 1892, he specially noted the 12th section which reads as follows:—

The Committee are of opinion that the scheme as proposed by the Department should be carried out; but they recommend before any of the permanent works are commenced, a thorough test with temporary pumping machinery be made to prove the quantity of water in the drift, and that, should this be found satisfactory, sufficient land surrounding the well be resumed as an additional safeguard against any contamination of the water.

Mr. Hickson found that this well had not been sunk, and no temporary pumping machinery had been erected. As a matter of fact, I understand that borings were taken around the site of the well, which proved the continuous existence of the drift, but it brought very forcibly to Mr. Hickson's mind the question as to whether a gravitation scheme could not still be found, and after having a conversation with Mr. Price on the subject, Mr. Price and Mr. Davis wrote this joint minute:—

In accordance with your instructions we have visited Tamworth, and made an examination of the proposed water supply scheme, and of the surrounding country.

We are of opinion that before any further steps are taken in regard to the pumping scheme, a careful exploration should be made of the mountains in the neighbourhood of the town, in order to put beyond doubt the possibility of obtaining a gravitation scheme at a reasonable cost. We would strongly recommend that an officer should be sent to make this examination at once.

Failing a gravitation supply, we recommend that a further examination of the river flats should be made by boring, before the site of the pumping-well is fixed, and that when the position of the well has been decided on, that a temporary shaft should be sunk through the drift, and the quantity of water available, tested with a centrifugal pump. The further examination of the pumping scheme is provided for in the report of the Public Works Committee.

Upon which Mr. Hickson wrote: "Without committing myself so far as to say that a gravitation scheme for Tamworth is an assured fact there is sufficient evidence before me to warrant my recommending that no further steps be taken with the authorised scheme for the present, and that a careful examination be

J. Barling,  
Esq.  
17 Dec., 1895.

immediately made in order to ascertain if the gravitation scheme, at a reasonable cost, can be secured." I submitted that to the Minister for approval, which he accordingly gave. Then on the 28th of June last, this further minute was written by Mr. Hickson:—

Referring to my minute 22/4/95 re the possibility of obtaining a gravitation scheme for the water supply for Tamworth, and the Minister's approval thereon that a careful examination should be made with this end in view, I instructed Mr. Price to visit and report.

Mr. Price has made a very careful examination of the country around Tamworth, and has selected what I think will prove a very successful gravitation scheme, the cost of which will amount to about £30,000.

The Public Works Committee approved of a pumping scheme estimated to cost £22,500, and an annual expenditure of £560. Capitalising this latter amount at 4 per cent. would bring the cost of the pumping scheme up to £36,500, thus showing a saving on the gravitation scheme of about £6,500.

In addition to this, as Mr. Price points out, it will be quite possible to use this gravitation scheme for working the electric lighting of the town, and so save the large expenditure now involved in this work. I recommend that a complete survey be now put in hand with a view to bringing the matter before the Public Works Committee.

ROBT. HICKSON,  
Engineer-in-Chief for Public Works.

I submitted that to the Minister for approval to carry out the necessary survey, and wrote, "Mr. Price, I think, deserves great credit for the way in which he has dealt with this matter, and this is not the first time that he has distinguished himself in a similar way." With regard to this Mr. Young wrote, "I quite agree that Mr. Price deserves much credit. It is unfortunate that either he, or an equally able officer, was not sent to investigate the matter at first." Now, with regard to the question as to why this scheme was not discovered at first, I cannot of course thoroughly explain it, but I can give the Committee some idea, I think, as to how it came about that it was not put forward at first. I can only say this, speaking of the Minister, that the sentiment in his mind is one of satisfaction that whether discovered early or late it has been discovered in time to prevent the other scheme from being carried out. I may mention for the information of the Committee that Mr. F. B. Gipps, who was once an officer of the Public Works Department, was commissioned by the Tamworth Council to examine the country around and propose a water scheme. You are aware that he submitted a long report on the subject, and he eventually recommended a gravitation scheme from the Cockburn River, sometimes called the Swamp Oak Creek. I think that the Department put very substantial reasons before this Committee why this scheme should not be carried out, and one great reason was that it would not have a sufficient head. I think the only head that that scheme would give was 127 feet above the railway station. It was not sufficient head to cover the town. There were a number of other objections against this scheme, which I think I placed before the Committee in giving my evidence in 1892.

2. Is there a plan of Mr. Gipps' scheme? I have a plan here.

3. But that plan does not show the Swamp Oak Creek? I have a plan which shows it, but that scheme not being before the Committee I did not bring it down. It was, however, very carefully examined by the Sectional Committee at the time. But to proceed. You are aware that Mr. Gipps made a report to the Tamworth Council, and in his report to the Council he made the following statement—or rather, I should say (as I have not his original report) from a letter of his, dated 7th September, 1895, which I believe must have appeared in one of the Tamworth papers. He says:—

In my report to the Municipal Council of July, 1890, I wrote thus:—"The sources of water supply for Tamworth are as follows—the Peel River, the Cockburn River, Moore Creek, Moonbi Creek, and Goonoo Creek."

Again, in writing on the merits of these different sources, I said of Moonbi Creek and Moore Creek, "That they offer exceptional watersheds at a sufficient elevation to command the highest part of the town by gravitation, but that they have been known to be quite dry for many months at a time, and after a careful examination of both valleys, under the guidance of Mr. W. J. Smith, the Mayor, I was unable to discover any favourable site for a storage reservoir. . . . It shows that I did examine Moore Creek, and condemned it on account of its incapability to supply the most essential want of any water supply scheme."

I have ascertained that the Mayor drove Mr. Gipps over the route to this Moore Creek to a point about 8 miles by road from Tamworth. Now, I think I am right in saying that neither the Mayor nor any other person in the town was aware of the possibility of the country to supply a gravitation scheme, simply because the examination did not extend far enough up the creek. It is not to be wondered at, therefore, that Mr. Gipps, under these circumstances, did not discover the capabilities of Moore Creek. Mr. Price and Mr. Davis too will show you that it is only after you proceed to about 6 miles further on the road that you have any idea as to the capacities of the scheme. When you arrive at 14-mile point going from Tamworth you would find even then that you have no idea of the existence of the fall from above which the proposed dam is to be built. It looks there as if the gully had come to an end, in fact that it had pinched out, but proceeding further you discover that the creek runs through precipitous rocks, its course being hidden until you come to what appears to be the head of the gully. About a mile further still you reach a fall of 700 feet, down which the creek plunges, forming a picturesque cascade. It is here that it is proposed to construct the dam. The greatest difficulty was experienced in reaching this fall. I think I am correct in saying that these features were unknown to Mr. Britten and to Mr. Gipps, and to most of the people in Tamworth, if not all.

4. How far is that from Tamworth? About 16 miles by road. There was another reason that led Mr. Hickson to look carefully into the matter. The water supplies which we have carried out in Parkes and Cootamundra have been by no means successes. The deep drifts there, which were supposed to carry a large amount of water, have been found to a very large extent to have given out, and although the case at Tamworth is not altogether parallel with that of Parkes and Cootamundra, still there is a sufficient similarity between the two places to make an engineer, having had experience in these works, hesitate before embarking on it. In Tamworth the drift would not be likely to give out. At Parkes there was a creek which has disappeared, and at Cootamundra there is a very small stream. We have had another case at Dubbo. There we have a water supply which is also drawn from the drift, which is found near a large flowing river—the Macquarie—and there it has been an eminent success. Notwithstanding the dry weather we have had, it was impossible to reduce the water in the well by more than about a foot. The well is now 60 feet deep, and the water is found at 45 feet, so that there is about 15 feet of water in it, and with all the pumping they have not been able to reduce it more than about a foot. I think now, Mr. Chairman, that without further preliminaries I might read you a brief description of this scheme:—It is proposed to construct a concrete dam, 350 feet in length, with a maximum height of 32 feet across Moore Creek, near its head, which will impound about 35,000,000 gallons of water, at a height

height of about 1,000 feet above the town. The catchment above the dam is about 22 square miles in area. The water will be conveyed by about 11½ miles of steel pipes, 6 inches in diameter, to a concrete service reservoir holding 500,000 gallons, situated about 1½ of a mile from the centre of the town, and at a height of about 250 feet above the main street. The present population of Tamworth is estimated at 5,100; the proposed works will be capable of supplying a population of 10,000, as provided for in the pumping scheme. The fall in the main pipe-line (63·6 feet per mile) is so great that it will be possible, with a 6-inch pipe, which is the smallest advisable size to utilise the surplus head for generating electricity for lighting or other purposes should the Council desire to do so. In designing the works provision will be made for this being done. The reticulation pipes provided for the pumping scheme will be used with some slight alterations necessitated by the change of the service reservoir site, and additions to reach some recently built houses. Thirty-three acres of land will have to be resumed for the storage reservoir, and the main pipe-line will only pass through about 5 miles of private land. The estimated cost of the scheme is £32,824, as follows:—

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Storage reservoir, 35,000,000 gallons ... ..	£5,311	19	0
Main pipe-line, 6-inch .. ..	8,628	5	0
Service reservoir ... ..	1,665	7	6
Service main and reticulation ... ..	14,151	14	6
Engineering and contingencies... ..	2,976	14	0
Land ... ..	90	0	0
<b>Total... ..</b>	<b>£32,824</b>	<b>0</b>	<b>0</b>
<i>Add for providing a 7-inch pipe instead of 6-inch for the purposes of electric power ... ..</i>	<i>2,550</i>	<i>0</i>	<i>0</i>
<b>Grand total ... ..</b>	<b>£35,374</b>	<b>0</b>	<b>0</b>

The site of the old reservoir was at the junction of Murray-street and Raglan-street. The site of the reservoir which we now propose, and which will be about 250 feet above Peel-street, will be on the common at the back of the hospital. We have gained very considerable advantage by the site now proposed compared with former one. The old reservoir has a height of about 187 feet about Peel-street; the present reservoir is 250 feet above Peel-street. I may mention here, also, that the highest ground to be served by this scheme is 238 feet, while we have a reservoir site of 250 feet, as against the old site of 187 feet. As far as I can make out, the population to be served by the reticulation will be something like 4,300 people. The balance of the population will not come in at present. The cost, as you will see from the estimate which I shall give, will be £35,374, or £2,550 in addition to the cost which will be required for merely supplying the town with the water scheme. This extra sum is required in order to supply a 7-inch pipe instead of a 6-inch, which will give the necessary power to work the electric lighting plant. In other words, it will give an electric power equal to 100 horse-power. At present their power gave them only 20 horse-power, and this, in giving them 100 horse-power, will enable them, not only to light the streets, but the houses.

5. It is an electric service, then, as well as a water supply? Yes; it will develop power to enable them to work the electric lighting plant. The old scheme provided for 22 miles of reticulation, but it was considered that 19 miles of reticulation would be quite sufficient for the town, and even that is a liberal supply. With regard to the quality of water from this source, there can be no possible doubt about it. I have here a report from Mr. Hamlet, the Government Analyst, which is as follows:—

GOVERNMENT LABORATORY, SYDNEY.  
RESULTS of Analysis of Potable and Polluted Waters.

Description.	Expressed in grains per gallon.				Expressed in parts per million.				Appearance in the standard 2-foot tube.
	Total solid residue, dried at 220.	Chlorine as chlorides.	Nitrogen as Nitrates and Nitrites.	Phosphates from animal impurity.	Free ammonia.	Albuminoid ammonia.	Oxygen absorbed in 15 min.	Oxygen absorbed in 3 hours.	
From Works Department— Supplied to Tamworth from Moore Creek.	15·00	1·5	Trace.	None.	·03	·00	·45	·90	Clear.

General observation on the character of the above water.—An exceptionally good water. The absence of albuminoid ammonia will be remarked.  
8th October, 1895. W. M. DOHERTY, F.G.S.  
(Pro Government Analyst).

Speaking of the financial aspect of the case, I may mention that one of the accountants of the office was sent to Tamworth to report. He only returned last week, after having gone into the subject with the Council most fully. The result of his investigation is as follows:—

TAMWORTH WATER SUPPLY.  
ESTIMATED Annual Revenue from all sources.

General rate of 1s. in the £... ..	£1,490	0	0
Public buildings and departments ... ..	240	0	0
Meter accounts—excess over rates ... ..	215	0	0
Irrigation (gardens, &c.)—60 at £2 10s. ... ..	150	0	0
Live stock, horses—200, at 5s. per head ... ..	50	0	0
Cows—100, at 5s. ... ..	25	0	0
* Contribution from lighting rate, on account of motive power supplied... ..	150	0	0

Total estimated revenue ... .. £2,320 0 0

\* Does not apply to pumping scheme.

J. Barling, Esq. I have prepared a statement comparing the pumping scheme passed by the Committee and the gravitation scheme now under consideration, which is as follows:—

17 Dec., 1895.

*Comparison between Pumping and Gravitation Schemes.*

Pumping scheme—			
Estimated cost, £22,500—Annual repayment	...	...	£814
Working expenses	...	...	560
Total annual cost	...	...	1,374
Revenue as per statement annexed	...	...	2,170
			£796
Gravitation scheme—			
Estimated cost, £35,374—Annual repayment	...	...	£1,280
Working expenses	...	...	200
Total annual cost	...	...	1,480
Revenue as per statement annexed	...	...	2,320
Saving in the working of the present electric light, <i>i.e.</i> —			
Cost of working	...	...	£220
Less payment to water account	...	...	150
			70
			2,390
			£910
Pumping scheme—Annual surplus	...	...	£800
Gravitation scheme—Annual surplus	...	...	910
			£110
In favour of gravitation	...	...	£110

or, a capital value of about £3,000.

I have urged that there are advantages to be gained in using this scheme for electrical purposes, and I put that down at over £150. The gravitation scheme is estimated to cost, as I have given before, with the electric lighting power £35,374; this means an annual charge towards interest and repayment of £1,280. The working expenses we have put down at £200, as against £560 under the pumping scheme. I may mention that Mr. Hickson and the engineers have put down £100 for the working expenses, but I am of opinion that they cannot be carried out for less than £200 a year. I shall be glad if the Committee will make a note of this and examine Mr. Hickson on this point. The working expenses and the annual repayment will come to £1,480.

6. *Mr. Lee.*] What is the total revenue? £2,320.

7. *Mr. Roberts.*] I thought you said it was £1,480? £1,480 represents the expenses. The saving in the working expenses of the electric lighting plant will be £70. At present it is costing the Municipality £220 per annum for work which will be done by water power under the proposed scheme, and for which the Municipality propose to credit the revenue with £150. If the £70 saved be added to revenue, £2,320, it will give a total annual revenue of £2,390, showing an annual surplus of £910, as against £796 under the old scheme. In other words, it shows £110 in favour of the gravitation scheme—that is, not taking into account the other many advantages to be gained from the gravitation scheme. This £110, calculated at 3·616 per cent., will show an annual saving in the capital value of £3,000.

8. How long is it since Mr. Hickson took charge of the Department? He took charge from the 1st July of this year.

9. Previous to that this Tamworth Water Supply had been under the consideration of Mr. Darley? Yes, and even before Mr. Darley's time. If I remember rightly it was ten or eleven years ago when it was first introduced. The first record we have was in February, 1880.

10. The result of Mr. Darley's consideration of it was that a scheme was submitted to this Committee? Yes.

11. And the Public Works Committee recommended that Mr. Darley's scheme be carried out? Yes.

12. What was the cause of the delay in the recommendation of the Public Works Committee not being carried out? I think, if I remember rightly, there were two causes. I am speaking now at a moment's notice, and from memory, but I think that the first cause was that the Tamworth people were not satisfied, and they kept on urging the Department to reconsider the matter. The second reason why it was not received was that at the time the Tamworth water supply, along with many other public works which were to be paid for out of loan, were held in abeyance on account of the financial difficulties of the country.

13. No doubt the principal reason was the opposition of the people of Tamworth to the scheme. They were in favour of a gravitation scheme, were they not? I do not think that they were in favour of Mr. Gipps' gravitation scheme, but they wanted a gravitation scheme.

14. Then I presume that the work was allowed to stand aside for a while? Yes.

15. Then Mr. Hickson came into office, and the question came under his notice? Yes.

16. Was Mr. Hickson moved by the Tamworth people asking that the work should be carried out? I do not know that; I have no written correspondence upon the subject, but I know that Sir George Dibbs, when he was Member for the district, brought the Mayor to the office several times, and a good deal of verbal correspondence took place.

17. Do you know, as a matter of fact, that it is really necessary that some scheme of water supply should be given to the people of Tamworth? Well, as they have done so long without a water supply, it might be

be possible for them to do without it for a while longer, but I do not think it would be desirable when it is shown they are so able to pay for it. Tamworth stands in the centre of a very large and fertile district. There is every probability, I should think, of its making rapid progress.

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Esq.  
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18. With regard to the recommendation of a former Committee that a thorough test with a pumping machine be made to prove the quantity of water in the drift,—was that test made as recommended? The necessary bores were made, and I suppose that satisfied the Engineer-in-Chief.
19. Was that test made at the instance of Mr. Hickson? I think it was made before he took charge. I have not the exact dates, but my impression is that it was made before.
20. Was it satisfactory or otherwise? Satisfactory as to the quantity of water. The quality of water has already been shown to be very good by a report from Mr. Hamlet.
21. But when you spoke of that water you referred to the old scheme, did you not? Yes; but what I have been giving in evidence refers to the new scheme.
22. Did you draw any comparison as to which water was better? I do not think any comparison was drawn, but both were very good. No exception could be taken to either.
23. Mr. Hickson having sent Mr. Price and Mr. Davis to report, he felt justified in recommending the Minister to submit this matter to the Public Works Committee for an expenditure of £30,000 for this new gravitation scheme? He felt justified in recommending it to the Minister at that particular stage that a survey should be made.
24. And this really may be termed an improvement on the gravitation scheme submitted by Mr. Gipps? No; it is another gravitation scheme altogether, from another source. Mr. Gipps' scheme was from the Cockburn River or Swamp Oak Creek. This is from Moore Creek.
25. Would you kindly point out Mr. Gipps' scheme as originally submitted? It is in exactly the opposite direction.
26. What distance is Moore Creek? From the site of the dam,  $11\frac{1}{2}$  miles from the Town of Tamworth. You must add on  $1\frac{1}{2}$  mile from the service reservoir to the town.
27. Is there a large fall of water there? There is a considerable fall of water there. I think it has been known to cease running. I may mention that the dam will impound about 35,000,000 gallons of water, and supposing the creek were to cease running, which it seldom does, I believe there is sufficient to supply the Town of Tamworth with 300,000 gallons a day for 116 days at a time without any water running into the reservoir.
28. Can you tell the Committee what is the extent of the catchment area? About 22 square miles.
29. What knowledge have the Department that it will supply Tamworth? The calculation I have given proves it. It will hold 35,000,000 gallons of water, and when once filled there will be 116 days' supply for Tamworth at 300,000 gallons per day, or about double the quantity the present population will in all probability require.
30. What will be about the fall? About 750 feet to the service reservoir, and 1,000 to the town.
31. Is it fair to assume that it would be continuous, except in very dry weather? I do not say that the fall of water will be continuous, but if you get the dam full you can do without the fall of water.
32. *Chairman.*] Does the 116 days mean a fair supply, or is it an excessive supply? An excessive supply. This would supply over 10,000 persons at 30 gallons per day. The population of Tamworth is about 5,000, and the actual number to be served is about 4,300.
33. Really it would be a sufficient supply for 250 days? On that we can safely reckon.
34. *Mr. Roberts.*] What would be the size of the dam? 360 feet in length, with the maximum height of 32 feet across Moore Creek at its head.
35. What quantity would it contain? 35,000,000 gallons.
36. What is the estimated total cost? £35,374—that is, allowing for a 7-inch pipe to generate electric power. It is proposed that there will be a 7-inch pipe. It would be a pipe with a valve or cock turned on so as to give the necessary power. It will have to drive the turbine wheel, which will generate the power for electric purposes.
37. Will any land be resumed? I am glad you mentioned that point. In our estimate we have allowed only £90 for a resumption of land. My own impression is—although Mr Hickson does not think so—that when the Committee see the locality they will recommend the resumption of a little larger area; so that I think the estimate will very likely be increased in amount, but that is a question which the Committee will have to judge of.
38. What area exactly is to be resumed? We should have to resume about 33 acres for the reservoir, but it is conditionally-purchased land, and is not very valuable.
39. Where the pipes traverse a person's property would they be entitled to compensation for severance? It is really a legal point. We have before paid for the resumption of pipe-lines, but it is a question whether we cannot refuse to do so under the Act. We do not, of course, propose to fence the pipe-line. The pipes will be buried. They will pass through about 5 miles of private land, but it is not to the interest of property-holders themselves that we should fence. By fencing them in you only create a harbour for weeds.
40. Is there not any precedent for that? The precedents are in favour of our resuming the land.

WEDNESDAY, 18 DECEMBER, 1895.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHRY,  
The Hon. JOHN DAVIES, C.M.G.  
The Hon. JAMES HOSKINS.  
The Hon. CHARLES JAMES ROBERTS, C.M.G.  
The Hon. WILLIAM JOSEPH TRICKETT.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
ANGUS CAMERON, Esq.  
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The Committee further considered the proposed Water Supply for the Town of Tamworth.

Joseph Barling, Esq., Under Secretary for Public Works, sworn, and further examined:—

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41. *Mr. Roberts.*] I think that when the Committee rose yesterday afternoon I asked you what would be the area of land resumed if this scheme were carried out? We shall have to take 33 acres about the reservoir. I may mention that it struck me as very possible that when the Committee came to see the ground that they would advise the resumption of more land around the reservoir. The Committee did this in the case of Junee, for instance. Then comes the question of putting the pipes through 5 miles of private land, and if we had to resume that, we should only resume a strip of 15 feet along the pipeline—this amount would be very small—equal to, I think, about 10 acres. Supposing we say 45 acres as the total area to be resumed.

42. Can you tell the Committee what has been done in other similar cases? In nearly every case we have resumed the land. In the earlier work we had not the power to take temporary possession of land to run pipes through, but it is a question as to whether we have not that power under the Public Works Act.

43. Would it not be well to ascertain as to whether you have that power beyond a doubt? I think there is no doubt about it. I will read the clause, 27th section Public Works Act, subsection (III):—

(III) To make or construct in, upon, across, under or over any lands, streets, roads, rivers, streams or other waters, within the lands described in the plans or mentioned in the books of reference of any authorised work, or any correction thereof, such temporary or permanent inclined planes, tunnels, embankments, aqueducts, bridges, roads, ways, passages, conduits, drains, piers, arches, cuttings, fences, as shall be considered necessary.

In connection with the sewerage works in Sydney, under these powers, we have run a large number of small sewers through private land, and except in very few cases there has been no claim at all made for compensation.

44. And if one were made in this particular instance, it would be of very small moment? Yes; I should just like to read in connection with the 27th section the 34th section.

34. In the exercise of the powers granted by this Act the Constructing Authority and all other persons shall do as little damage as possible; and, if required, full satisfaction shall be made in manner herein provided, to all persons interested in any lands or hereditaments which shall have been taken, used, injured, or prejudicially affected, for all damages sustained by them by reason of the exercise of such powers.

If owners can prove that we have damaged the land in any way they can claim for the damage.

45. Has the Government any knowledge as to whether the Tamworth Council approve of this scheme? I have no official knowledge, but I know, as a matter of fact that they will thoroughly approve. There has been no time to get their formal approval, but as the Committee are going there themselves they will, of course, find out from the Council direct whether they approve of it or not.

46. The Council was always in favour of the gravitation scheme, was it not? Yes; I may say here that the Chairman asked me yesterday to get some authoritative statement if possible as to the taking of the land for the pipe lines, and I sent to Mr. Watkins, Parliamentary Draftsman, and he wrote the following minute:—

The Minister may, under section 27 of the Public Works Act of 1888, enter any private land, and lay pipes there, and construct drains, &c. But before that section is applicable, the work must be "authorised," i.e., authorised by sanctioning Bill passed in pursuance of section 16 (1), of the Public Works Act.

If the land used is "prejudicially affected" by the construction of the work, compensation must be paid for damages sustained (if any).

I cannot see anything in the Country Towns Water and Sewerage Acts to authorise the Minister to lay pipes through private lands, although that power is by section 16 (5) given to the Council constructing works, subject to the liability imposed in the latter part of the section to make full compensation for all damage sustained.

No power to enter and use private land can be implied; it must be expressly given; and when given, the requirements of the statute must be complied with.

Section 124 enables the Governor by the hand of the Minister to construct and complete works for water and sewerage, and impliedly he has the powers necessary for carrying the intention of the section into effect, e.g., he may make contracts, employ men, &c.; but I do not think that the section authorises him to interfere with any private rights of property, e.g., by entering private land or using private land for the purpose of laying pipes, &c.—J.L.W., 18/12/95.

47. *Chairman.*] You will see it is a remarkable thing if a municipality has any right of interference 12 or 14 miles out from the municipality? Well, I cannot say as to that; I think there is no doubt that if we resume the land they would certainly be under the control of the municipality, but of course there may be difficulties in the way.

48. *Mr. Cameron.*] You tell us this track will pass through about 5 miles of private land about 15 feet wide—can you give the Committee any idea as to the amount that may be chargeable for compensation? I cannot exactly say.

49. What number of people will be affected by this proposed water supply? The population of Tamworth is now about 5,100, but the population affected by this will be a little over 4,000.

50. And the total expenditure will be how much? The total expenditure would be £35,374, including the 7-in. pipe.

51. And what advantages will the Government receive in respect of the expenditure of this money? The Country Towns and Hunter District Water Supply and Sewerage Act Amendment Act of 1894 gives the Government power to extend the payments over 100 years, and provides for interest to be charged at 3½ per cent. and that means that they pay for principal and interest in 100 years at 3.616 per cent.

52. What is the capacity of your reservoir? Thirty-five million gallons.
53. *Mr. Wright.*] What is the extent of the catchment area? Twenty-two square miles.
54. Have the Municipal Council been consulted about this last scheme? Yes; but I have no formal acknowledgment that they have accepted it.
55. Would it be necessary that they should notify their acceptance before the work is entered upon? The Act does not imply that.
56. Is there anything in the Act which renders it obligatory on them to accept the work when it is completed? The Minister, on completion of the work, reports the fact to the Governor and the cost of it, and then by notification in the *Gazette* it is handed over to them and becomes vested in them.
57. Do I understand that whether the Council approve or disapprove of the work, they are compelled to take it? As a matter of fact, I think it is so.
58. I think you will find in the Act that you will have to have the concurrence of the Council? No; I think it is as I have stated. I will read from the fifth part of the Country Towns Water and Sewerage Act of 1880, section 125:—

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125. Upon the completion of any such work the said Minister shall report that fact to the Governor. And the Governor shall notify such completion in the *Gazette*, and thereupon the Council of the Borough or Municipal District within, and for the purpose of which the said works shall have been constructed shall take over the same, and the administration and management thereof upon the terms and conditions hereinafter prescribed, and upon any further terms or conditions which the Governor may in any case appoint, viz. :—

- (1.) The whole amount [subject to such partial remission as the Governor may think just under any special circumstances] expended upon any such works as certified under the hand of the Minister for Public Works, shall be a debt chargeable upon the general revenues from whatever sources derived of such Borough or Municipal District until defrayed as hereinafter provided.
- (2.) Such debt shall be liquidated by periodical payments to the Colonial Treasurer to be by him carried to the Consolidated Revenue Fund. And the first payment shall be made within one year from the date of the *Gazette* notification of transfer, and shall be for an amount equal to six pounds per centum of the debt so certified as aforesaid. And before the end of each succeeding municipal year thereafter, a payment shall in like manner be made until the aggregate amounts paid shall equal the amount so certified as aforesaid, together with interest added at the rate of four per centum on the balance remaining unpaid in each year. So soon as the sums so paid shall equal such amount together with interest added as aforesaid, all further payments shall cease, and the rates and income arising from such works shall be discharged from any further payments in respect thereof.

59. That being so it is obligatory on the borough to accept this responsibility, but I would like to know if the municipality of Tamworth has been consulted about this new scheme? We have sent the reports to them, and an officer has been there the last week going through the municipal books, and I understand from him, and from other sources, that they are quite willing to have this scheme.

60. With regard to the pipe line of some 5 miles through some private property, you say you may possibly resume a strip 15 feet wide,—have you made any calculation for severance to the properties? I do not think so, because the pipes will be buried, and they will have the use of their paddocks all the same.

61. But at the different levels they may be on the surface sometimes? In this case the pipes will be always under the surface.

62. *Mr. Black.*] What did you say was the catchment area? Twenty-two square miles.

63. I see that Mr. Gipps' catchment area would be 300 square miles? He takes in the Cockburn River.

64. Is this creek any great length about the point where you think to construct the dam? It will be pretty well at the head of the creek, but we have calculated the catchment area. I may say that we have, as it were, a roof of 22 square miles to fill this reservoir, which contains 35,000,000 gallons.

65. Would it be possible, if it were proved by experience, that that dam did not contain sufficient water for the requirements of the town, to construct another dam nearer to the town? It would be possible, but not desirable. There is about 7 miles of the creek above the dam which we propose to construct, and it would be possible to put another one above it. The engineer would be able to give you any information on that point.

66. What advantage would there be in that—would not the water which you dam up there be prevented from reaching the other dam? When the upper reservoir became full it would overflow, and the water would run into the other dam.

67. Would it not get there in any case? This dam would retain it to its level and then the surplus would flow away.

68. What is the estimated pressure? We have got a head of 1,000 feet to the town.

69. What pressure did Mr. Gipps' scheme give? Mr. Gipps' scheme would not have a head of more than 170 feet above the railway station. We should have a head from our service reservoir of 250 feet. One of the greatest objections to Mr. Gipps' scheme was that the head was not sufficient to enable the higher parts of the town to be supplied.

70. Then this scheme would not only reach higher parts of the town, but would be adapted to the purpose of giving general water power? Yes; such as would be used for electrical purposes.

71. You get that great head on the service reservoir, and by having this 7-inch pipe? We should be able to shut off the water so as to develop 100 horse-power.

72. I suppose there is no settlement above there? No; it is entirely cattle and sheep runs.

73. Do you propose to resume the whole of that? No; it is quite unnecessary. We only propose to resume 33 acres around the reservoir.

74. Is that piece part of the station? That 33 acres would compose part of the station, but I think it is conditional purchase land.

75. Then there is no danger of pollution? I do not think so at all; in fact, I think it presents all the features of an ideal water supply.

76. You have seen those photographs;—did it not strike you that it would have been better to have taken a photograph of the waterfall, giving us some idea of it—of the volume of water? That might be so.

77. The photographs are admirable as scenic effects, but they give us very little idea of the amount of water that falls over? The officer who went up took the photographs himself. They are useful as showing the kind of country which shows the very best watershed.

78. What quantity of water would be dammed? 35,000,000 gallons.

79. What is the usual estimate of household consumption? About 30 gallons per head per day.

80. *Chairman.*] Your reply yesterday was that the present population of Tamworth would find a sufficiency of water for about 250 days? Yes.

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81. *Mr. Humphery.*] Are all the opinions expressed by you derived from officers of your Department whose direct evidence will be available for this Committee? Yes.
82. You have no information other than that obtained from the officers? No. Of course I have been to Tamworth, but I have not been there for that purpose.
83. Have you a list of the country towns having their water supply provided by the Government? Yes. We have spent about £494,288 in water supplies—*i.e.*, outside of the Hunter River and Sydney.
84. In how many cases are you receiving repayment? The amount of the existing debts comes to £352,283. There are other water supplies which we are either carrying out or have completed, but have not yet gazetted the debt which amounts to £132,005, making a total of £494,288 now. The instalments due at the present time we can compel to be paid on the 31st December. We have brought the debts up to December of last year, and a year has been allowed in which to make the payment; so that, on the 31st December this year, we can compel the payment of £4,732 7s. 5d. I am saying this subject to correction, because it has been estimated roughly. At the present moment we have received £9,183 8s. 6d. In fact, we are compelling all the municipalities to pay up, and we, on 31st December, intend to put the Crown Solicitor in motion to compel those who have not paid up to do so.
85. Will the £4,732 represent the total instalment payable? Yes; it will.
86. Can you furnish a return showing the total expenditure by the Government in providing water supply for the country towns and of the cost under which the amount payable has been gazetted? Yes; I will have a statement prepared showing this.
87. And all other cases where the expenditure has not been completed and the water supply has not been handed over? If the Committee wish I will show the actual cost. I will show the amounts due as gazetted, and then I will show what instalments are due, and what have been paid. We have received £9,183 8s. 6d. as against £13,915 16s. 1d.
88. Are there many instances in which country towns have been unable to pay instalments for which they are responsible? A number of them have expressed unwillingness and inability to pay. In the case of Goulburn, where the amount due on the 31st December of last year was £1,988 16s., they were given a twelvemonth to pay it in, but of course we asked for the payment at the beginning of the year, although we cannot legally press for the amount until this year. They have paid £1,450 of that £1,988 16s., and they have represented to us that £1,450 is as much as they can pay per annum. At the same time they can show a cash balance of £4,000 odd. I have written to them to the effect that if the money is not paid on the date due, the Crown Solicitor will be put in motion to compel it to be paid. Then there is the case of Wagga Wagga. There they have paid £1,251 10s. 3d., when they should have paid £1,592 3s. They will also be compelled to pay the balance. There are several other cases of the same sort, such as Wentworth and Balranald. I am speaking now more from memory; but I think it has been conclusively proved to us that in the case of Wentworth, at the present time it is absolutely impossible for them to pay the instalment. Since the works have been constructed at Wentworth, the town has decreased in importance, and the question now is if, under the Amending Act which will be brought before Parliament, we should not give them power to go to a higher rate of taxation.
89. What is the present rate? A shilling in the pound.
90. Are you quite satisfied now yourself that in the case under consideration the district is well able to pay? Undoubtedly. I think they will be able to pay the full instalment.
91. What is the present estimate of the amount that will be available for the repayment of instalments in connection with this water supply? We expect a revenue of £2,390, which will leave an annual surplus of £910.
92. When you were under examination in 1892, you estimated it at £1,632? Yes.
93. What gives rise to the difference? I think, if I remember rightly, the Committee drew attention to the fact that we had under-estimated it then.
94. What have you now estimated the ratable property within the reticulation area? The general rate, at a shilling in the pound, will come to £1,490. I have statistics which will support what I am saying. What the general rate of one shilling in the pound would be is all shown in the statement I handed in yesterday.
95. Do you wish to add anything to your statement with regard to the matter about which I have asked you some questions? There is one thing which I think in fairness I should say. In making a comparison between the pumping scheme and the gravitation scheme, it is fair to point out that in the pumping scheme there are 22 miles of reticulation, and that in the gravitation scheme there are only 19 miles. Therefore, I made out an amount of £110 in favour of the gravitation scheme, and I take it these 3 miles of reticulation would account for the apparent difference in amount between the two schemes. I have not taken into account the full amount which will be gained by the supply of electric power at the present time. Electricity is only supplied for lighting four arc lamps and ninety incandescent lamps. The scheme we propose will enable private residences to be lighted.
96. I suppose the Department has now formally rejected the former pumping scheme? Yes.
97. Although that was strongly recommended at the time by the Department? Yes, at the time.
98. And the Department is now of opinion that a gravitation scheme would be suitable? Yes, a gravitation scheme is always superior to a pumping scheme.
99. *Mr. Hoskins.*] With regard to your answer in reply to Mr. Humphery's question as to the Goulburn Water Supply, do not the Railway Commissioners use the water at the Railway Station? I forget for the moment, but it is probable that they do.
100. I ask you for this reason—because if they have, is not a large proportion of the rates paid by the Government? They cannot have paid very much.
101. Was Mr. Hickson in any way influenced by the evidence that was given before the last Public Works Committee on the subject? Everybody is so fully satisfied that a gravitation scheme is so much better than a pumping scheme (other things being equal) that I have not the smallest doubt that Mr. Hickson thought that if he could possibly get a gravitation scheme it would be better to try again.
102. Have you read the evidence of the last Committee on the inquiry into this subject? Portions of it.
103. Mr. Darley's evidence? I just looked through it.
104. Mr. Pridham's evidence? No.
105. Mr. Price's evidence? No; but I know pretty well what it is.
106. Do you know that Mr. Price stated most positively in his evidence that the gravitation scheme would be undesirable? I do not think he could have said that. What he said was that he preferred the pumping scheme to Mr. Gipps' gravitation scheme.

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107. At question 954 of the evidence he was asked "You would recommend a pumping scheme in preference to gravitation," and he answered "Yes." What do you make of that? The only gravitation scheme that was before the Committee then was Mr. Gipps' scheme, and that would have a head of only 127 feet, and then further there was no possibility of that scheme developing power for the generation of electric light.
108. Are you aware that Mr. Darley gave his evidence before that of Mr. Gipps? Yes; but Mr. Darley knew what Mr. Gipps' scheme was when he gave the evidence.
109. Can you give the Committee any idea of how much public money has been expended, and in making inquiries and exploration with a view of ascertaining what would be the cost of a pumping scheme? We have really spent on this Tamworth Water Supply about £14,000 at the present time, but a larger part of this amount has been spent in pipes which were sent up to Tamworth some time ago, and of course they are still available for use.
110. And would these pipes be as well adapted for a gravitation scheme with a heavy pressure as for a pumping scheme? Yes; there would not be the 1,000 feet fall that I spoke of but the 250 feet fall from the reservoir.
111. Are you aware that in addition to the expense that is incurred by Government in sinking wells, and in testing drifts there is the expense of the Public Works Committee inquiry? Yes; but I did not include that.
112. Are we to infer that any portion of the original scheme will be availed of? Yes; we have the service reservoir and the pipes for reticulation, but the pipes from the reservoir to the impounding dam will be fresh altogether.
113. *Mr. Davies.*] How do you arrive at so large a revenue under this scheme in comparison with the old scheme? The revenue to be derived has been got out more carefully for this scheme.
114. In your estimate of revenue, with how much do you credit the railway buildings? I have included that under the heading of public buildings, £240, and we have put down the railways at a lump sum of £150; they were willing before to go to £180, but we thought it was fair, considering that the water would be really cheaper, to put it down at a smaller sum.
115. You provide in your estimate for street-watering? No, I have not allowed for that.
116. You are aware that in the former report £167 was set down for that purpose? Yes; I am inclined to think the Committee, when they go into this, will see that we have still under-estimated it.
117. From the data supplied by the officers of the Department you think that the income will be fully realised in the estimates submitted to the Committee? Yes.
118. Then you set apart £200 as the annual cost of the control and management of this supply? Yes.
119. Is that independent of the Council, or is it included in the annual cost to be deducted? I take it that it is a part of the working expenses that the Council will have to pay.
120. What officers will be employed under this £200 a year? There would have to be a turncock, and a man would have to see to any repairs that may be necessary. Mr. Hickson thinks that this amount is over-estimated.
121. What wages would a turncock get? I suppose about £2 per week.
122. And the engineer? We should not want an engineer, but I have allowed £100 per year for repairs.
123. Do you not think that the sum set down is a very small one to provide for repairs and for a turncock? No; Mr. Hickson put it down to a smaller sum, and it was only after conversation with him that I got it increased.
124. You think that one turncock would be sufficient? Yes; the maintenance men of the Council would be available to assist.
125. What provision have you made in your scheme for renewals and repairs outside this £200? The surplus will be so large that we shall have ample to meet charges of that kind.
126. The estimated surplus under the former scheme was about £400, was it not? Yes.
127. You stated, I think, that the pipes were to be 7-inch steel pipes? Yes; that is, between the service reservoir and the impounding reservoir.
128. Can you give us any idea of the probable life of a 7-inch steel pipe? I would rather you would ask that of the engineer.
129. Simply as a matter of common sense, what would you say it would last—sixty years? I should think it would; but I say again that I would rather you asked the engineer about it. My opinion on the subject is of no value.
130. I want to ascertain what provision has been made by the Department for renewals under this scheme—the whole scheme might be dead and buried in 100 years' time? In the estimate of expense I have given, an ample amount is allowed for anything of that sort.
131. The capacity of the reservoir is such as to supply Tamworth for 116 days? Yes.
132. *Chairman.*] Supposing Tamworth to be twice as large? Yes.
133. *Mr. Davies.*] Have you any calculation that you can put before the Committee as to the annual rainfall for the last twenty years in this locality? I have not particulars now; but, of course, I could easily get them.
134. I want to know how long it will take to fill the tank? I am not in a position to give that information.
135. How far will the embankment of your catchment reservoir be from the cascade that you told us of yesterday? About  $\frac{3}{4}$  of a mile.
136. The depth of it I think you described yesterday as about 30 feet? Yes; the greatest depth.
137. Is there any provision made for weirs? All the necessary provisions are made, and will be explained to the Committee by the engineer.
138. You say you remember that when the former scheme was submitted to the Committee the officers of your Department were very strongly in favour of the pumping scheme on Peel River, and I think Mr. Price was one of the officers who gave very strong evidence in that respect;—he, at that time, appeared to be the only officer of that Department who had any experience in carrying out a pumping scheme from a shingle or drift, so far as this Colony was concerned? I should not like to say so for certain, but it is possible it is so.
139. Cootamundra was the first scheme carried out on the principle of the former scheme for supplying Tamworth? Yes.

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140. You have had several complaints as to the defective character of that scheme? Yes.
141. What has been done to increase the supply of water for the people of Cootamundra? We have done nothing, except trying to liberate some more of the water in the drift; but it is something like a sucked sponge.
142. Still the municipality of Cootamundra is to be saddled with this great cost of supplying them with works that do not supply water? I think, most undoubtedly, that we shall have to come to the assistance of both Cootamundra and Parkes. It is not as if the schemes are altogether worthless, because the reticulation plant is still there, and the pumps that we have used there will be of considerable value, and can be used elsewhere.
143. And the same will apply to Tamworth, as far as reticulation is concerned? Yes.
144. If the former scheme had been carried out the fall from the distributing reservoir would not have been sufficient to serve the whole town? It was proposed in that case to add a small reservoir to that, to supply the higher parts of the town.
145. It would have left a certain portion of the town unsupplied? Yes.
146. This scheme would be something like 1,000 feet above the level of Peel-street? The pressure to supply the town is 250 feet, as against 187 feet in the former scheme.
147. So that it would reach the highest point of the Town of Tamworth? Yes.
148. *Chairman.*] With regard to the engineering aspect of the case, that is left to your officers? Yes.
149. Then you have nothing further to state? I do not think so. I should, however, just like to draw the attention of the Committee to the financial position of Tamworth, as stated in the Committee's report, page 7, section 5, which I will now read:—

5. The position of Tamworth in relation to its ability to meet the financial obligations in connection with the scheme referred to the Committee appears to be satisfactory. According to a statement produced by the Under Secretary for Public Works, the figures are as follows:—

The annual value of the ratable property within the reticulated area is £32,348 3s. 7d., which, less 10 per cent., gives a sum of £29,114.

A rate of 1s. in the £ on this amount would give.....	£1,450 0 0
Water supply to Railway Department, say .....	182 0 0
Total revenue .....	£1,632 0 0
Amount required to provide for interest on capital sum, viz. (£22,500) and sinking fund, at 4 per cent. ....	£900 0 0
Estimated working expenses.....	560 0 0
Total .....	£1,460 0 0

This statement shows an annual surplus of revenue over expenditure of £172, and nothing has been allowed, it is pointed out, for water which will doubtless be supplied to factories and other places by meter, or for any increase in the future. The Sectional Committee, in an estimate which appears in their report, place the revenue at £2,260, and show the surplus to be £800. They say also that "the Borough Council is in an exceptionally sound financial position, its total indebtedness being £5,000, while its assets, consisting of freehold property, electric lighting plant, and credit balance at the bank, is over £7,000."

150. *Mr. Humphery.*] There is no doubt that statement was borne out by the evidence which the Sectional Committee took at the Town of Tamworth? Yes.
151. I think, in answer to a question by Mr. Wright, you said that there would be no formal approval, as far as the local Council is concerned, but you are well aware that they favour a gravitation scheme as against the pumping scheme? Yes.
152. Even if it cost £35,000? Yes.
153. *Mr. Trickett.*] Look at question 15 in the prior evidence, and you will see that it distinctly states there that the Council did not care to involve itself in more cost than £30,000? The cases are quite different now. In that £30,000, which may have been expended under Mr. Gipps' scheme, there was no provision made for the electric light. This is a cardinal feature of this scheme, and completely alters its character.
154. Is it not rather "putting the cart before the horse," to go to the expense of this Committee, afterwards to find that the Council will not subscribe to this scheme? I will get a resolution passed by the Council formally approving of it.
155. In the amending Act of 1895, it is provided that the cost of any water supply for a country town with interest added would be spread over a term not exceeding 100 years—have you worked out what amount would have to be provided by this Council? Yes, 3·616 per cent. will pay for capital and interest in 100 years.
156. What amount would that come to per annum? £1,280.
157. It is estimated by the Government that the annual repayment over a term of 100 years, in conformity with the Country Towns Amendment Act of 1894, will involve an annual charge for 100 years on the Tamworth municipality of £1,280? Yes.
158. Will you put that feature before the Council? Yes.
159. Looking at the question of gravitation as against pumping, the present scheme seems rather to find favour with the Tamworth people does it not? Most undoubtedly.
160. *Mr. Clarke.*] Is the Tamworth Municipality in favour of this particular scheme of gravitation? Yes.
161. I notice that in the case of some municipalities which have had the works carried out before this are in default? Yes.
162. What steps do you take to make them pay up? If they do not pay up all their liabilities directly the period expires the Crown Solicitor will be put in motion to compel them to do so.
163. What have you to levy on? We can put a receiver in and take the whole of their rates from any source.
164. Would not it be harsh treatment? It would not be harsh to councils who could and yet would not pay.
165. *Mr. Cameron.*] You consider this should be a primary charge upon all rates? Yes.
166. *Mr. Lee.*] As a matter of fact, have you not already received the sanction of the Municipal Council to fix up water-works? We have not in a formal way.

167. I refer you to your evidence before the Committee in October, 1892, page 2, where you quoted the following resolution, which had been passed by the Tamworth Council:—

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That the Council of the Municipal Borough of Tamworth, having taken into their consideration the question of water supply for the town of Tamworth, do hereby request His Excellency the Governor, with the advice of the Executive Council, to take all such steps and cause such works to be executed as may be necessary to provide a water supply for the town of Tamworth, and the said Council, on behalf of the Municipality of Tamworth, hereby agree to do and undertake all the liabilities and obligations mentioned in Section 125 of the Act 44 Victoria, No. 14, and it is hereby expressly agreed that such liability is accepted for the total amount to be expended on such works, provided that such amount does not exceed twenty thousand pounds.

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—? Yes, but we would not accept that.

168. That was in December, 1891? Yes.

169. And the Minister would not accept that proposal with that stipulation? No.

170. But in January, 1892, was it not a fact that the Minister received communication from the Tamworth Council agreeing not to insist on that stipulation? Yes.

171. And in reply to a question asked you as to whether the Council were in favour of the gravitation scheme, you said yes? Yes, I think so.

172. Without any stipulation as to the amount? I do not think so.

173. That, at all events, shows that the Council had taken action in the first place—and not the Department? Yes.

174. Since that resolution has passed has there been any communication from the Council desiring to withdraw that resolution? Not that I am aware of.

175. So far as the Department is concerned, is there any reason to think otherwise than that the Council is equally desirous now to have the gravitation scheme? No reason.

176. The only question that can be submitted to the Council now is a formal one? Yes.

177. As a matter of fact, has not the Municipal Council assisted you to get out your statement of revenue; therefore, they know all about it? Yes; an officer of the Department was for some days engaged with the Finance Committee of the Council.

178. And received a great deal of information and assistance, and got supplied with the data from which he made his calculations? Yes.

179. And they are, therefore, well aware of the probable cost of this work? Yes; I know they are.

180. *Mr. Wright.*] The cost of this scheme is nearly double to that of the old scheme? I have pointed out that Mr. Gipps' scheme could not be carried out at this estimate.

181. *Mr. Hassall.*] The additional advantages of this scheme, you consider, would counterbalance the extra expense? Yes.

182. Have you any knowledge as to whether the objection to the pumping scheme was that it would cause probable contamination of the water? I can only draw attention to Mr. Hamlet's report; you will find all about it there.

183. Have you any knowledge of the locality from which it is proposed to draw this water supply? I have been to Tamworth, but never to this particular place. Mr. Price and Mr. Davis have both been there, and when they come before you they will give full details.

184. You are not aware that Moore Creek is a permanently-running stream? I could not say that it is a permanently-running stream; but there is sufficient water for our purposes, even at the driest time of the year.

185. *Mr. Fegan.*] Did it not strike you that your officers did not go a great deal further than they did in connection with the first scheme—that they did not make a better inspection? It is to be regretted that it was not done.

186. You think that it will be cheaper to have a 7-inch pipe than a 6-inch pipe? Yes; because it will supply power for the electric lighting as well.

187. The extra expense of the 7-inch pipe over the 6-inch pipe will be how much? £2,550.

188. You say that your revenue will total £2,590—on what water rate do you base that upon? A shilling in the pound.

189. And if the Tamworth people will not pay that—have the Tamworth people agreed to that shilling in the pound rate? There is no doubt they will agree to it.

190. Do you know of any work that cost twice as much as the estimated cost? The Hunter River supply was increased about double, I think.

191. Have the residents of that district made any complaints about the high water rates? They complain of a shilling in the pound, undoubtedly; but from our views of the case a shilling in the pound is not a high rate.

192. Then you base your income on the supposition that one shilling in the pound will be paid? Yes.

193. You stated yesterday that the population at present is about 5,000? 5,100.

194. And that with this scheme you would be able to supply a population of 10,000, at the rate of 30 gallons a day? Yes.

195. Do you not think that the question Mr. Black asked with reference to a second reservoir would help considerably to provide against a drought? Yes; but it is quite unnecessary.

196. Are there no great droughts up there? Yes; but there is quite sufficient rainfall to supply the town, notwithstanding.

197. And, therefore, you think that, in the interests of the health of the people of Tamworth, this scheme is necessary? Yes.

198. Have you got any medical officer's opinion upon this scheme? Well, we have Mr. Hamlet's report as to the purity of the water.

199. *Mr. Black.*] What is the water rate in Goulburn? A shilling in the pound.

200. *Mr. Cameron.*] Do you anticipate that if this scheme is carried out that the maximum amount will have to be levied from the people? It would be wise to do so at first; they will soon find out what amount is necessary.

201. In your opinion it may be reduced when the thing gets into working order? Yes.

THURSDAY, 19 DECEMBER, 1895.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.	CHARLES ALFRED LEE, Esq.
The Hon. JOHN DAVIES, C.M.G.	JOHN LIONEL FEGAN, Esq.
The Hon. JAMES HOSKINS.	ANGUS CAMERON, Esq.
The Hon. CHARLES JAMES ROBERTS, C.M.G.	THOMAS HENRY HASSALL, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	GEORGE BLACK, Esq.
HENRY CLARKE, Esq.	FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Water Supply for the Town of Tamworth.

Robert R. P. Hickson, Esq., M. Inst., C.E., Engineer-in-Chief for Public Works, sworn, and examined:—

R. R. P. Hickson, Esq., M.I.C.E.  
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202. *Chairman.*] Would you like to make a statement in regard to the works now under consideration? I think Mr. Barling has pretty well explained them.

203. *Mr. Wright.*] Are you perfectly familiar with the plans of the proposed works? Yes.

204. Will you kindly explain the plan to the Committee? Yes. The red line, as shown on the plan, is the line on which we propose to take the pipes from the reservoir into Tamworth. We follow Moore Creek Valley along the road until we get to the bottom of the waterfall, and from the turn, which is about 10 miles from the reservoir, we come to the falls, and there is a rise there of 700 feet in about a quarter of a mile, and it is on top of that flat that we propose to put the concrete dam.

205. About the catchment area—has that country been examined by yourself? I have been over some of it.

206. Are you quite satisfied as to the holding qualities of the ground? It is excellent gathering ground both for pure water and for holding it.

207. Has the flow of water from Moore Creek been gauged for any length of time? No.

208. Would it not be desirable in a work like this to gauge the supply of water there—for about three months, say? I do not think it is necessary when you have a catchment area of 22 square miles.

209. Would you think it advisable to gauge the fall of running water there for a certain period of time? I hardly think so for the reason I give.

210. The Peel River is sometimes almost dry, and at Moore Creek, which is only a tributary of the Peel River, is it not likely that it may become dry also? It is quite possible. From the information that I have been able to gather I believe it has never actually run dry, but there is no doubt that at times there is very little water in it.

211. When your catchment dam is erected what quantity of water do you expect to impound there? 35,000,000 gallons.

212. And how long will that last supposing that this creek were run dry? For the present population it would last for about 250 days.

213. Over such a large catchment area would not the evaporation be very great in summer-time? Yes, it would.

214. Have you ever made any calculation as to what the evaporation would be there—say for three months in summer-time? It would be considerable, but I have never made any exact calculation.

215. You feel quite satisfied that this scheme would give Tamworth a permanent water supply? Yes.

216. There is no likelihood of it ever failing? Not the slightest.

217. You have got a reservoir in Tamworth, have you not? Yes.

218. May I ask if you do not sacrifice a considerable fall by the construction of a service reservoir at such a low elevation? It is not desirable that it should be any higher, as it would put too great a strain on the taps. The site that we have selected is a very suitable one, and is just about the right height above the town for the supply of water.

219. I understand that since you assumed your present position you advised that the old scheme for a supply to Tamworth of water be abandoned;—what led you to take that course of action? When I assumed my present position, tenders were in for the pumping engines for Tamworth, and looking through them, I asked the question as to whether one of the conditions of the Public Works Committee had been fulfilled, as given in page 9 of the report:—

The Committee are of opinion that the scheme as proposed by the Department should be carried out; but they recommend that before any of the permanent works are commenced a thorough test with temporary pumping machinery be made to prove the quantity of water in the drift, and that should this be found satisfactory sufficient land surrounding the well be resumed as an additional safeguard against any contamination of the water.

I asked if that had been done, and I was told it had not, and then I sent for Mr. Price, who told me that he felt satisfied that a gravitation scheme could be obtained. From what he said to me, I recommended to the Minister that he should have an examination made. Mr. Price made the examination, and it led to the scheme that we are recommending now.

220. Do you know if any proper test was taken as to whether the drift would give sufficient water? Not to my knowledge.

221. Have you, or any of your officers, been in communication with the municipal officers at Tamworth? I saw the late Mayor, Mr. Smith, and the present Mayor, and they were both very favourable to the scheme.

222. Did you give them any idea of the cost of this scheme? I gave them an approximate idea of the cost.

223. And still they approved of it? Yes.

224. Do you think any difficulty will arise in this case, as has risen in the case of Goulburn and Wagga Wagga, and several towns where they expressed their inability to pay to the Government? All I know is that the works will certainly be constructed for the estimate.

225. Do you not think that in all these cases some official communication should be made to the municipality, asking them whether or not they are in favour of the scheme, and whether they are prepared to take it up at the estimated cost? I think that is generally done, but whether it has been done in this case, I cannot say.

226. *Mr. Black.*] I would like to know what proportion the cost of this work will bear towards the revenue derived from ratable property as compared with Goulburn? I am not prepared to give that answer—you will get that reply from the accountant. R. R. P.  
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227. *Mr. Humphery.*] Have you satisfied yourself as to the details of the proposed scheme and the cost? 19 Dec., 1896.  
Yes.
228. What sized pipe do you propose to use for conveying the water from the dam to the 10-mile point? A 7-inch pipe, if we provide for the working of the electric lighting—if not, a 6-inch.
229. There is a fall, I understand, of some 700 feet between the dam and the 10-mile point? Yes.
230. Do you intend using the same sized pipe between the fall and the 10-mile point as you will use from the 10-mile point to Tamworth? It is a 7-inch pipe right through to the service reservoir.
231. Do you remember the size that was mentioned as being necessary in the gravitation scheme proposed by Mr. Gipps? No.
232. What would be the cost per mile of the pipe line? The pipe line is £8,628.
233. That is for the whole distance? Yes.
234. How would you divide that up—that is to say what cost per mile between the dam and the 10-mile point, and between the 10-mile point, and the reservoir? I cannot give you that information now.
235. What fall would there be from the dam to the 10-mile point? About 750 feet.
236. What is the difference in height between the 10-mile point and the reservoir? About 100 feet.
237. What fall will you have per mile? The hydraulic grade is 1 in 83 or 63·6 feet in the mile.
238. Do you intend having a continuous line from the dam to the reservoir with a uniform fall of 1 in 63—is that it? No, not exactly. The hydraulic grade from the dam to the service reservoir is 63·6 feet to the mile, but the way the pipes will come depends upon the irregularities of the ground.
239. What quantity of water will a 7-inch pipe deliver into the reservoir? A 7-inch pipe will deliver 547,200 gallons in 24 hours with that fall.
240. You are aware that under the gravitation scheme that was before the Committee when this question was being considered previously there was a fall of 3 feet per mile, and Mr. Darley's evidence was to the effect that the delivery from a 10-inch pipe would be 300,000 gallons daily. I suppose that owing to the greater pressure in your scheme, there would be half a million gallons at least in the twenty-four hours? Yes.
241. So that there is no question that there will be a sufficient quantity of water delivered through a 7-inch pipe? Not the slightest.
242. That would be an advantage in favour of this scheme in the case of the pipe line? Yes.
243. What is the difference that you estimate in the cost of a 10-inch pipe line and a 7-inch pipe line per mile? It would be very great. A 10-inch steel pipe would, I daresay, cost double what a 7-inch would.
244. In round figures what would be the saving in that item alone, that is, between the 7-inch and the 10-inch pipe? To speak approximately, I should say, the saving would be about £8,600 as against £16,000—there is no occasion for the 10-inch pipe at all.
245. As to the reservoir, I suppose there will practically be no difference between the cost now proposed and the one that would have been necessary for the other gravitation scheme? Practically no difference.
246. Do you know anything about the figures that Mr. Barling supplied yesterday, showing the amount of annual instalment that would be payable by the Tamworth Council? No.
247. I suppose you have read the evidence supplied with the report of the Public Works Committee on the abandoned scheme? I read most of it.
248. You are aware that it was not contemplated by the Public Works Committee previous to commencing the permanent works with a view to ascertaining if the proposed supply would be a satisfactory one? Yes.
249. Was it that evidence alone which led you to make this investigation of the different sources of supply, or had you any other information before you? I had no information before me at that time, except what Mr. Price told me, which was that he thought the gravitation scheme could be obtained—and I may say too, that knowing the formation of the country, I found it hard to imagine that a gravitation scheme could not be carried out there.
250. Are you aware that Mr. Price strongly recommended this pumping scheme in opposition to any gravitation scheme? No, I am not.
251. You do not gather that from the evidence then? I get quite a contrary impression.
252. It strikes me as somewhat singular that the pumping machine should have been so suddenly abandoned? Mr. Price will explain that fully.
253. *Mr. Hoskins.*] Have the Department any pipes in store for the supply of Tamworth with water as the result of the recommendation of the last Committee on the subject? There are a lot pipes at Tamworth.
254. Is there a sufficient number of pipes to carry out your proposed scheme? No; but we would utilise what are there.
255. What is the size of these pipes? There is a short length 9-inch—the rest are, of course, 7-inch.
256. Do you think that the pipes which are there are sufficiently strong to carry off the water where there is a pressure of 700 feet? Yes.
257. Then you intend to use larger pipes up near the dam? No; smaller pipes, and consequently stronger ones.
258. The dam is only  $\frac{3}{4}$  mile from the fall, is it not? Yes; about that.
259. Do you think it wise to have the dam so near to the fall? You might put it on the very edge of the fall if you have a granite foundation.
260. With respect to the catchment area of which you were speaking—most of the country; I understand, consisting of sand and granite boulders—do you not think that in dry weather a great deal of the water would sink away? I do not think so; there is very little sand above the fall, and it is all granite rock country which, I think, will hold every drop of water that falls on it.
261. Would you not require, in addition, to make a concrete bottom for the dam, that is to hold the water so that it would not escape? The dam rests on a granite bottom.

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262. Yes; but it is not solid granite—you would still have the joints? We propose to cut down into it until we get a good bottom; it will be a similar foundation to that of the Armidale and Junee dams, and they are as good as can be wished for.
263. Do I gather from you that this new scheme was evolved in consequence of the evidence given before the last Committee? Partly; and from what Mr. Price told me.
264. I suppose you are aware that Mr. Darley, Mr. Pridham, Mr. Price—notably Mr. Price—all expressed the opinion before the last Committee on the subject, that a scheme for pumping water from a drift was preferable to a gravitation scheme? I do not gather that from Mr. Price's evidence. What he said was that he preferred the pumping scheme to the gravitation scheme then before the Committee.
265. He was asked (Q. 954): "You would recommend a pumping scheme in preference to gravitation, even if it cost you £50,000 for the latter? Yes."? That is quite right.
266. *Mr. Trickett.*] Since the report of the last Committee, has anything occurred with regard to the possible impurity of the water to be obtained by the pumping scheme, which induced the Department to change their views? Nothing of the kind; I think the water is pure.
267. It is simply that the Department think a gravitation scheme would be preferable to a pumping scheme? Yes; cheaper and better.
268. I notice that on page 3 of a former Committee's report these words occur: "All the other witnesses examined were in favour of a gravitation scheme, if it could be had at a reasonable cost,"—that is your view at the present time? Certainly.
269. You were asked with regard to the pipes, if you thought those at Tamworth would be suitable for the requirements of the proposed scheme? Everyone of them will be used.
270. For what part? For the reticulation,—the 9-in. pumping main will be used as the supplying pipe from the storage reservoir down to the town.
271. You think it will be sufficiently strong for that purpose? Yes.
272. Are you fully satisfied that the height of this service reservoir will be sufficient for the purpose of supplying all parts of East and West Tamworth? Yes; it is 250 feet above the main street, and the highest ground to be served is 238 feet;—there are no houses there at present, and it is very unlikely there ever will be.
273. But if it were, you would still have a head of water of about 12 feet? Yes;—if it were at all necessary to supply this point, it would be very easy to take a small pipe from the high pressure line of supply to the top of the hill.
274. Yesterday, Mr. Barling told us that you estimated that the extreme cost of carrying the working expenses in connection with this scheme, if once established, would be £200 per year;—are you quite satisfied about that? I think it is too high.
275. Would you give us your opinion as to the amount that would be incurred? You require very little under a gravitation scheme. Orange now, for instance, has had a gravitation scheme for over ten years, and I do not think they have spent a £5 note on it.
276. Are not some permanent hands employed? I believe myself that the present corporation labourers will be able to do all that is necessary, but in case that more might possibly be required to be done I have allowed £50 for additional clerical work, and £150 for a man. I think, however, that if they get this scheme, they will be able to do it without extra assistance. The Mayor, however, is the one to give you information on that point.
277. But with regard to the whole length of the pipe from the dam to the town—will not some permanent labour be employed in connection with looking after that? No; once the pipes are laid, there is no more trouble with them.
278. Therefore, you think that £200 a year is more than sufficient? Yes.
279. Will you tell us how much a mile you have allowed in your estimate for the reticulation service? The principal assistant engineer will be able to give you that as he has all the details at his fingers' ends.
280. I was going to ask you to describe in detail the dam that is to be erected? It is simply a repetition of Junee to all intents and purposes—a concrete dam.
281. In constructing a dam of this kind in the turn where the water lies there will be beds of sand here and there—that, I suppose, will be cleared out until you get down to the granite bottom? There is hardly any sand at all above the creek for 3 or 4 miles.
282. Have you checked the proposed expenditure which is supposed to be £35,374? No; I have not gone into the quantities, but they can all be certified to.
283. Has that amount been checked by anyone except Mr. Price? The quantities were taken out by the officers of the Department, and checked by Mr. Davis, the Principal Assistant Engineer.
284. Is it based upon the price of labour at the present time? Yes, upon fair prices.
285. Can you tell us at what you estimate the cost of the service reservoir which is to contain, I understand, 500,000 gallons? £1,665.
286. Mr. Gipps when he had his scheme under consideration, estimated the cost of a similar dam, to contain the same quantity of water, at £2,000—has labour gone down, or what? Well I cannot say altogether.
287. I suppose the dam is to be located on an expensive site? The site would be inexpensive, and I cannot imagine a much better one.
288. *Mr. Davies.*] What is the width of the base of your chief reservoir? It is 24 feet.
289. What would be about the height of it? About 36 feet from the very bottom of the excavation—from the surface it would be about 32 feet.
290. I want now to ascertain from you what would be about the pressure or weight of water against the wall supposing the reservoir was filled? I would have to work that out—you can get the information from the officer who designed the wall.
291. But you think it will be strong enough to hold 35,000,000 gallons of water? Yes.
292. In your judgment would it be possible for a breakaway or a washaway to take place by reason of the want of strength in some part of the wall? No, because we have provided strength enough in the wall to allow a large margin for safety.
293. I understand you to say that the foundation will be built upon the boulders? No, on the rock.
294. So you cut down into the rock? Yes.
295. Will there be any possibility of percolation or escape? We would make it absolutely water-tight.

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296. You would use no puddle nor anything of that kind? No, it would be a concrete wall.
297. And the price of that wall you have separately estimated? Yes, at £5,312.
298. I think you have said that you propose to use steel pipes from the dam to the service reservoir? Yes.
299. What is the difference between the head of your reservoir at the catchment area, and the service reservoir? About 750 feet.
300. So that there is practically a fall from the storage reservoir to the service reservoir of 750 feet? Yes.
301. Will the 250 feet from the service reservoir give you sufficient head to supply the whole town of Tamworth? Yes.
302. Do you represent the difference between the level of the service reservoir of this scheme, and that of the pumping scheme? The old reservoir was only 187 feet high, and this is 250 feet.
303. So that it will give you a much better head for a town delivery than the proposed pumping scheme? Yes, 63 feet more.
304. At what per ton do you estimate the cost of your 7-in. steel pipe? I have not got the figures here just now.
305. Do you base your estimate on what the pipes can be got for in the cheapest market, or in what they can be got for in the Colonial market where you might have to pay 15 or 20 per cent. more? I estimated on the cheapest price that I knew them to be obtainable for. If the people here can supply them for the price, well and good.
306. Are they imported pipes or Colonial made pipes? Imported pipes.
307. You are aware that in the previous inquiry it was proposed to get a supply of pipes to cost a large sum of money—£23,000, I think—and it was estimated that the pipes could be got in a local market alone, even if they might cost 15 or 20 per cent. more. I do not know how the estimate was worked out.
308. Did you base your idea on getting your pipes in the cheapest market? Yes.
309. *Mr. Lee.*] You told the Committee that the distance from the 10-mile point to the dam, would be—how far? Less than half a mile.
310. With a fall of 700 feet? Yes.
311. As a matter of fact, the real pressure under that gravitation scheme would be in that  $\frac{1}{2}$  mile? The greatest pressure would be at the lowest point of the pipe.
312. But for the first  $\frac{1}{2}$  mile, where you would have a fall of 700 feet, do you estimate that the 7-inch pipe would be sufficient to resist that pressure? That is not where the heaviest pressure is. The heaviest pressure is at the lowest point of the pipes, about 5 miles further down.
313. In this instance the real fall is in the first  $\frac{1}{2}$  mile? Yes, practically.
314. Still it is at the lowest point the greatest pressure would be? Yes; and we have made our calculations accordingly. I may say that in regard to these pipes we calculate what pressure would break them, and then we design the pipes to stand four times that amount.
315. Notwithstanding all these precautions, accidents do happen to the service pipes, do they not? I think I am correct in saying that we have only had one steel pipe that has broken, and then that only gave way because of a bruise in the caulking. We have had no steel pipe break yet under the pressure that we have put on it in any water supply.
316. You absolutely rely on steel pipes for safety? Yes, beyond all question.
317. The service reservoir is estimated to contain 500,000 gallons? Yes.
318. The population estimated to be served is 4,300, at a daily use of 30 gallons? Yes.
319. That would be equal to a little over three days' supply? Yes, about that.
320. Supposing that you met with an accident to your supply pipe from the dam, what position would your townspeople be placed in then? They would not be in a worse position than they are now. If you propose to load all water-supply schemes with such contingencies as that, you put out of the question the carrying out of them at all. The probability of a steel pipe bursting, is so remote that it would be very bad engineering to meet it by constructing large reservoirs.
321. Do you think a three days' supply sufficient to leave the people to depend upon? Yes; in Newcastle, with a population of 60,000 people, they have only 1,000,000 to depend upon, and I have never known them to be short.
322. The Hunter River water supply did not meet the requirements under the first expenditure? That was because there was only one pumping main.
323. But leave to supplement it was got from Parliament quite recently? Only a new pumping main from West Maitland to Buttai.
324. In the event of heavy rain, what is to prevent the water stored in your dam from becoming unfit for use? Why should it be with such a catchment area?
325. But after heavy rains the water must become muddy? That applies to every water supply.
326. What about filter-dams? They are perfectly useless.
327. Why? Except to take up impurities, they are no use in clearing the water. They have had experience of that in Newcastle.
328. But they would extract the mud and filth from the water? They would extract the impure matter.
329. The colour would be given to it by the influx of mud, would it not? Yes, slightly; but the dam would act as a large settling tank.
330. What would be the cost of a large settling tank? Such a thing is not used.
331. But might it not be used for the dual purpose of a settling tank and a reservoir for additional supply? You could put a few loads of sand in the bottom of a service reservoir, for that matter; it would not cost very much, but it would be utterly useless.
332. You think it would be quite unnecessary? I know it would be.
333. And do you find that people are satisfied with muddy water? I can only ask you what you think of the Sydney water supply? It is just dealt with in the very same way; in fact, with the Sydney supply it is worse, because the water is brought down from Prospect in an open drain into which dirt can get on the way. Still I do not think you would call the water you get muddy.
334. That would be in the section between the Nepean and the reservoir—is there not a provision for shutting off the water when the Nepean is flooded? No, none that I know of; I have seen the water going down the drain quite thick. What takes place at Prospect is on a very much larger scale than what would take place in this high-water level dam.

- R. R. P. 335. Take the Hunter River;—are there not large settlement tanks or reservoirs there? There are; but  
Hickson, Esq.; they were never used during my time.  
M.I.C.E. 336. But are there not specially constructed reservoirs at the Hunter River for the purpose of settling  
19 Dec., 1895. the water? There are; but as I say, they are useless.
337. But they must take out a large quantity of sediment by allowing the water to settle, do they not? Yes; you take out the sediment and any impurities, but you do not alter the colour of the water.
338. *Mr. Clarke.*] You say that the dam will hold 35,000,000 gallons of water; you also say that it will supply Tamworth for 250 days? Yes.
339. There must be some mistake here, because Mr. Barling said in his evidence yesterday that it would contain only 116 days supply? Two hundred and fifty is for the present population; 116 for double that amount.
340. You think that on the whole the present scheme is preferable to the one reported on by the Public Works Committee some years ago? I do.
341. Some of your officers, I think, said they preferred the pumping scheme? Very likely.
342. *Mr. Fegan.*] Following up the question put to you by Mr. Lee, you have got passed through Parliament a Bill providing for the expenditure of another £35,000 for emergencies in connection with the Hunter River District Water Supply;—that was for a double line, was it not? For a double pumping scheme.
343. It was, as Mr. Lee pointed out, to provide against the emergency of one of these pipes breaking? Not exactly. The same state of affairs does not exist here as at Tamworth. There you have to pump the water at a very severe pressure, and you subject the pipes to continual hydraulic rams the force of which it is difficult to estimate; but here you can calculate to a pound what a pipe has got to do.
344. Do not hydraulic engineers recommend filtering beds in connection with water supply? I do not think so.
345. Have they not been extensively used recently in the various water supplies of Great Britain? They have been used in some cases where the water was not as pure as one could wish.
346. You think this water is perfectly pure? Yes.
347. Much better than the Hunter River water? Infinitely better—the whole catchment area here is virgin ground.
348. Have any complaints been made to you as to the abandonment of the original scheme of supplying the Town of Tamworth? On the contrary, the Mayor and the late Mayor are decidedly in favour of this, as against the pumping scheme.
349. Have there been any deputations to your Department asking about the delay in carrying out this service? The only deputation I know of was one to the Minister, asking for the work to be postponed until the gravitation scheme was considered.
350. Mr. Gipps' scheme was a pumping scheme, was it not? No; a gravitation scheme.
351. How do the inhabitants of Tamworth regard this scheme, as regards Mr. Gipps' scheme? Not being connected with either the pumping scheme or the former gravitation scheme, I cannot say.
352. I think you were President of the Water Supply in Sydney at that time? I was one of the members.
353. Was not your advice asked for as to the desirability of Mr. Gipps' scheme? No; it did not come under my jurisdiction at that time.
354. What would be the difference in the cost of land resumption under this scheme, as against the former scheme? You mean the quantity to be resumed?
355. Yes, and the price? There would be very little resumption under this scheme at all, because most of the way the pipes follow the main road; we would, of course, have to resume the area for the reservoir.
356. Have you any idea what was the cost of resumption of the old scheme recommended by the Committee? I cannot tell you.
357. Do you think there is any necessity for a second storage dam? I think not—a tenth of an inch rainfall running into the reservoir would fill it.
358. Do you know what the rainfall is up there? It averages about 28 inches a year.
359. That dispenses with the idea of the second dam? Yes.
360. You will not be using any machinery in connection with this scheme, will you? We propose to work the electric lighting plant with it.
361. I mean to say that there will be no machinery in connection with this water scheme? No.
362. *Mr. Hassall.*] Have you calculated the difference between the cost of Mr. Gipps' scheme and this one? No; Mr. Gipps' scheme was given at £17,000, and then revised and made £24,000 by Mr. Darley; but the cost of carrying it out as it should be done would be £40,000.
363. What was the cost of the pumping scheme? The cost of the pumping scheme was £22,500.
364. Would that have been increased in any way? They would have to spend £560 per year on working expenses.
365. This scheme is estimated at how much? £35,374.
366. Is it your opinion that the present scheme would be much cheaper than the pumping scheme, and entail less charge on the residents of Tamworth? Yes.
367. In view of that pipe passing through first-class agricultural land, could the storage capacity of that dam be increased at a reasonable cost, so as to allow of some of the water being used for irrigation purposes? It would be very difficult to do that after the dam was built, because you could not increase the height without increasing it at the base.
368. But in building a dam could it be done? That could be done easily enough, because you could have a broader base to build upon.
369. What would it cost to carry that dam 10 feet higher? It would run into a good deal of money.
370. What I wish to arrive at is this—would the additional expense be justified in view of the fact that irrigation might take place along the line of that pipe? Before you speak of irrigating that country you had better see it, it is most barren country. To do what you say would increase the cost of the dam enormously—the base of a dam 40 feet high would be much greater than the base of one 30 feet high.
371. But could you increase the storage capacity if 35,000,000 gallons were not found sufficient? If it were found necessary afterwards to increase the storage capacity, it would be better to put one or two smaller dams higher up.

372. *Mr. Cameron.*] Which would not interfere with the present scheme at all? Not at all.
373. In the construction of this proposed reservoir, what are the materials you would use? Sand, gravel, and cement, and big blocks of stone.
374. No brick? No brick.
375. *Mr. Roberts.*] Mention has been made about utilising this water supply for the supply of Tamworth with electricity;—is not Tamworth already lighted with electricity? To a certain extent.
376. How do you get the power for the electric-lighting at the present time? They have two 20-horse power engines working one at a time, but they supply a very small portion of the town. They have asked me to provide 100-horse power in this scheme, and I have done that with a 7-inch pipe.
377. It would be a great advantage to Tamworth to have this increased power? Yes, they can save £250 a year by it.
378. If it were not for being able to supply this power to Tamworth you would have used the 6-inch pipe? Yes.
379. What is the difference in cost between the 6-inch and the 7-inch pipe? £2,500.
380. And the revenue you will get you estimate will more than pay for the increased outlay? Yes.
381. *Mr. Black.*] I would like to ask where you propose to make the electric power attachment—from the pipes at the service reservoir or from the pipes above? The pipes above.
382. So as to have a greater pressure? Yes; you would not get the head from the service reservoir—you understand that that water is not wasted; it goes through the pipe, works the engine, and goes into the reservoir.
383. *Chairman.*] You have stated that your catchment area is some 20 square miles—the only information before the Committee in regard to that is shown on the plan. You must have something to base your calculation of the area on? It was taken from the parish map.
384. You will notice on the plan that in places there are some sharp bends in the line;—will you tell us as an engineer, whether at any serious bend in the pipe friction would take away the head. Why do you not make it straight across the bend? We are trying to follow the road wherever possible.
385. Why keep on the road? It is always better whenever possible to have the pipe on the road. It is possible that you may have to pay for resumption, and if you take the road you avoid that.
386. With regard to the statement you made that a tenth of an inch falling over 22 square miles would fill your reservoir—is that so? I said a tenth of an inch going in.
387. What is the rainfall at Tamworth? About 28 inches.
388. In your opinion how much of the water falling on that water-shed gets into your dam? Half an inch falling over it would fill the dam.
389. The red line on the plan shows the hydraulic grade, and in going down you will see that you have several high places to go over;—what is the effect when a pipe is taken over the hydraulic mean? It will reduce the flow.
390. At once? Yes.
391. When it goes over the hydraulic mean the flow is at once reduced? Yes.
392. Have you taken measures so that you will not be above the hydraulic mean? Yes; we will sink the pipe deeper into the ground at those particular places.
393. The Committee can see those places if they go up I suppose? Yes; one is on the road and the other is a short distance from it.
394. Your officer would be able to tell us any detail in connection with it? Yes.
395. *Mr. Hoskins.*] In your evidence you have stated that a dam proposed to be constructed here was somewhat similar to a water supply authorised to be constructed at Junce? Very much the same.
396. Is that dam finished? Very nearly.
397. Is there any water impounded in it? We are letting the water go through it—it is similar in construction to the Orange dam, which is full.
398. The Committee which reported on the Junce works were very dubious about the dam's holding capacity, and I would have liked to have known if it succeeded in impounding as much water as you expected? We are letting what water comes in go through.
399. *Mr. Cameron.*] Can you give the Committee any information as to how long Tamworth works are likely to take? About eighteen months, I should think.
400. It would give employment to a number of men? Yes; we could start the work at once.
401. Do I understand that the Department will carry out the work itself, or call for tenders? Call for tenders. We can start the reticulation works at once.
402. You think there will be no difficulty in obtaining in the district everything required for going on with the work? Everything but cement.
403. What is cement running at now? 10s. 6d. per cask.
404. *Mr. Hassall.*] Was it possible to take any other route following down the bend down the valley of Moore Creek? We did try one route, following up the cattle reserve and going across Levy Springs, but it was too high.
405. *Mr. Davies.*] Would it be possible to modify your plan and take out that sharp angle at the crest of the ridge? We have gone as far west as it is possible to go at that point.
406. *Chairman.*] Is that point shown on the plan right up against your hydraulic mean? Yes.
407. *Mr. Davies.*] Would not those angles very much reduce the head of water? All that was taken into account when making our calculation.
408. *Mr. Black.*] What size of pipe will be used for the supply of electric power? Seven-inch pipe.
409. But is not that the same size as the pipe that will supply the service reservoir? That is the pipe that works the electric-lighting plant. On that 7-inch pipe there is an engine erected to work the electric-lighting.
410. You do not actually withdraw the water into another pipe? No; it is throttled there. There was a question asked yesterday as to the life of the steel pipes—I would like just to read an extract from a standard work on hydraulics bearing upon the question. It is from Burton's, "The Water Supply of Towns," published in 1894. He says:—

R. R. P.  
Hickson, Esq.,  
M.I.C.E.

19 Dec., 1895.

Experience in the United States goes to prove that there is no danger in using steel or wrought-iron pipes instead of cast-iron, and they have in some cases been used for thirty-three or more years. Our bituminous coating is a perfect provision against corrosion, and the only care that has to be observed is in seeing that the pipes are properly coated before they are laid in the track.

R. R. P. I would like to read a further extract from a pamphlet read before the Victorian Institute of  
Hickson, Esq., Engineers—  
M.I.C.E.

19 Dec., 1895. The larger wrought-iron pipes are much cheaper and secure against bursting, and if properly coated will last at least as long as the cast-iron pipes with the ordinary coating. Mr. Schussler's experience of wrought-iron pipes laid for city water supplies extends over twenty years; his recent remark that the first of them, although put into the ground twenty years ago, "are as good as when laid," is a fair credential. He refers to 200 miles of pipe ranging up to 37½ inches in diameter as, although being from eight to seventeen years in operation, are perfectly sound to-day.

411. *Mr. Davies.*] The longest period of life is thirty-three years? That is the longest period that has been observed.

412. You are aware when the Government construct works for country towns or municipalities, they give them 100 years in which to pay off the capital cost? Yes.

413. Then how many times in that period would it be necessary to renew the whole of the pipe service;—taking thirty-three years as the average life of a steel pipe it would have to be renewed three times, I suppose? In the extract that I read, it was stated that at the end of thirty-three years they were as good as when put into the ground.

414. Taking the payment of the capital cost of the construction of these water-works at 100 years, do you believe that the steel pipes that will be put down to serve the Town of Tamworth will last 100 years? Yes; I see no reason why they should not if they are properly coated.

415. What is the thickness of these steel pipes? One-eighth and three sixteenths.

416. Is it possible that a one-eighth and three-sixteenth steel pipe will last for 100 years? If the bituminous coating is put on properly, I see no reason why they should not last 100 years.

417. Are they coated internally? They are coated internally and externally.

418. In your estimates do you provide for coating? Yes.

419. Has it not been the practice in this Colony for sixty years to do the same thing with pipes? No; they were only tarred.

420. Are you aware that it was really the practice of the Sydney Council to do that for years? It was not the same sort of thing—by the new method we place them in a bath, and coat them inside and outside.

421. *Mr. Wright.*] By what name is this coating known? It is bituminous coating.

422. *Mr. Davies.*] Would there be no wear from the pressure of the water? No.

423. Have you any other authorities you would like to quote from? No, it is not necessary; the quotation I have given is from a standard work on hydraulics.

424. You have seen the enamelling on baths and things of that kind—now would that last fifty years? No, I do not think it would; it is subject to what we might call wind and water. In the case of the pipes, they are only subject to water. If a pipe is sometimes empty and sometimes full, it makes a great difference. When the air gets in, oxidization takes place.

425. In the catchment area, will not a certain amount of acid and other mineral quality impregnate the water, and thus have an action upon the pipes? We have had that water tested, and the result is before the Committee in Mr. Hamlet's report.

426. If the pipes are properly coated over in the way you speak of, you do not hesitate to express the opinion that they would last 100 years? I do not know what is to wear them out.

427. *Mr. Black.*] Is not the wear on the pipe more from the inside than from the outside? That will depend upon which side the coating comes off.

428. Is there not more danger of the coating coming off inside than outside, owing to the continual flowing through of the water? I do not think so; I think there is very little difference.

FRIDAY, 20 DECEMBER, 1895.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. JOHN DAVIES, C.M.G.

The Hon. JAMES HOSKINS.

The Hon. CHARLES JAMES ROBERTS, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.

JOHN LIONEL FEGAN, Esq.

ANGUS CAMERON, Esq.

THOMAS HENRY HASSALL, Esq.

GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Water Supply for the Town of Tamworth.

Edward Bellingham Price, Esq., M. Inst. C.E., Assistant Engineer, Department of Public Works, sworn, and examined:—

E. B. Price, Esq., M.I.C.E. 429. *Chairman.*] What position do you hold? I am Assistant Engineer for Public Works.

430. You are the pioneer in connection with this work, are you not? Yes.

431. The main principles of the scheme you are therefore responsible for? Yes, entirely.

20 Dec., 1895. 432. Has it been handed over to another officer to carry out the details? Yes.

433. Then your examination had better be limited to the general principles of the scheme? Yes.

434. *Mr. Black.*] May I ask you if you arrive at your decision regarding the suitability of the scheme now under notice as a means of securing a water supply for the Town of Tamworth by reason of the quantity of water that falls from that precipice, or because of the latent possibilities of the catchment area? I think, perhaps, it would simplify matters if I were allowed to hand in or read my preliminary report on the subject.

435. Will you kindly read it? Ycs. It is as follows:—

The Engineer-in-Chief for Public Works,—  
Sir,

Public Works Department, 1 June, 1895.

E. B. Price,  
Esq., M.I.C.E.

20 Dec, 1895.

I have the honor to submit my preliminary report on an entirely new scheme for the water supply of Tamworth. Having been sent to Tamworth during the course of the Public Works inquiry into the authorised pumping scheme, in order to clear out the old trial shaft, and take samples of water for analysis, I became more or less familiar with the proposed pumping scheme, which, as far as pumping schemes go, would have been an excellent one, provided the proper site had been selected for the well. It, however, struck me from reading the evidence, and from the questions which were put to me during my own examination, that no single person had examined all the country within reasonable distance of Tamworth, with the view of finding a source for a gravitation supply. All engineers, whether Government or private, had followed in the same groove, first trying the gullies at the back of the town, and then having resort to the rivers, where the want of fall entailed very long mains of a comparatively large diameter.

No one seems to have thought of examining the country beyond the ranges to the north of the town, where it was possible some large creek might be found, having its source in the Moonbi Mountains, on which a storage reservoir could be constructed of sufficient capacity to supply the town during drought.

Probably the difficulty of obtaining sufficient head to gravitate over the ranges near the town was considered insurmountable, more especially in the days when wrought steel mains were unknown.

Not being personally connected with the authorised scheme, and being practically unacquainted with the mountains, my opinions could hardly be expected to carry weight. Having, however, of late frequently to cross the Moonbi Range on the way to the Armidale water supply, my opinions as to the possibility of obtaining a gravitation supply became so strong that I thought it my duty to bring the matter under your notice, with the result that you stopped the acceptance of a tender for the pumping-engines, and instructed me to point out to Mr. Davis (in whose hands had been placed the country towns water supplies) the locality from which I thought a water supply might be obtained by gravitation.

This was done last month, when we stopped for a day on our way back from Armidale and drove across the ranges and for a short distance up Moore Creek.

On our return we reported, recommending an officer should be sent to investigate. This was approved of, and I had the honor to receive your instructions to make the investigations myself.

I have now much pleasure in reporting the success of my explorations.

I arrived in Tamworth on Tuesday morning last, and started on horseback to examine the head of Moore Creek. Owing, however, to the difficulty of the country and the impossibility of obtaining a guide, and the misdirection of those who thought they knew the tracks, I spent the whole day in the mountains without striking the real creek. On Wednesday I followed up the creek as far as possible in a buggy, and then walked. By this means there is no difficulty (except for the heavy climb) in reaching the head of the creek. On the following day, though well satisfied with the result obtained, I examined all the creeks on the other side of Tamworth, in the direction of Moonbi and Nundle, but found nothing to compare with Moore Creek as a source for the gravitation supply.

On Friday I investigated the pipe-track through the ranges at the back of Tamworth and to the storage reservoir, re-checking my aneroid levels. I also took rough cross-sections of Moore Creek at the dam site sufficient to prepare a reliable estimate of the cost of the dam and holding capacity of the reservoir.

On Saturday, before leaving, I had a long interview with the Mayor (Alderman Britten) and explained the proposed scheme. I also called upon Mr. Poate, District Surveyor, who kindly fixed the limits of the catchment area from the original plans, and supplied other valuable information.

Moore Creek, the proposed source of supply, rises in the Moonbi Range, near Bendemeer, and after flowing for about 9 miles through poor grazing and extremely wild country, enters a narrow gorge, where it flows over bare granite and diorite bars, till it reaches the edge of a series of falls, in all about 700 feet in height.

Some idea of the character of the country is given by the accompanying photographs, which I was fortunately able to take. Most of the loose boulders appear to have been swept off the top, leaving the intrusive bars of granite bare, and carried down to the bottom of the falls, where they form a heap several hundred feet high, as shown in one of the photographs, which was taken from the opposite side of the valley.

Just at the head of the falls is an admirable site for a concrete dam; in fact, one of the best I have seen yet in the Colony. The rock is perfectly bare and sound on each side of the valley, and very little excavation will be necessary to prepare the foundation for a dam 35 feet in height.

In the centre of the creek are a few large rocks which have fallen from the top, and are now resting on solid rock. The removal of these, and some sand which has accumulated round them, is practically all the excavation which will have to be done before starting the concrete.

Just above the dam site, as is generally the case where there has been a granite upheaval, the bed of the creek is fairly level, and admirably suited for a storage reservoir.

The catchment area of Moore Creek above the proposed site for the dam is 23½ square miles (fully four times as large as necessary), the greater part consisting of wild rocky mountains. The present flow in the creek, after one of the driest seasons known, is about 70,000 gallons per day, and I doubt if the creek has ever been lower, as it appears to be fed by springs and soakages.

Under the authorised pumping system it was proposed to provide engine-power sufficient to supply 30 gallons per head per diem to a population of 10,000, or more than twice the present inhabitants. I have, therefore, provided for a supply of not less than 300,000 gallons per day, although I consider a much less quantity would supply Tamworth for very many years to come. Still, as the site for the storage reservoir is such an economical one, and as the surplus water is always available for supply of power to the electric lighting plant, the full supply may as well be provided for in the first instance.

The following table gives approximately the comparative contents, cost, and storage capacity of a reservoir, with dam of different heights on the site selected:—

Height.	Cubic yards concrete.	Cost.	Storage Capacity in gallons.
30 feet.	1,030	£ 1,850	16,500,000
35 "	1,580	2,700	28,000,000
40 "	2,300	3,850	39,000,000

As previously stated, the present flow in the creek amounts to about 70,000 gallons per day. It is possible that in even drier years than the present the flow for a time may be less. Taking it, therefore, at 50,000 per day, a 30-foot dam would provide for a period of sixty-six days without rain; a 40-foot dam for 156 days, while the 35-foot dam would provide for 112 days.

The average rainfall at Tamworth is about 28 inches per annum, and is probably heavier on the mountains where Moore Creek rises. I think, therefore, that with a 35-foot dam, Tamworth might rely on a permanent supply of 300,000 gallons per day.

The catchment area is a very large one—nearly three times as great as that of the Armidale supply. One inch flowing off it would yield the enormous quantity of 341 million gallons.

The elevation of Moore Creek at the site of the proposed dam is about 1,000 feet above the railway station in Tamworth, while the lowest gap in the range, at the back of the town, is only about 320 feet. There is, therefore, a very great fall in the pipe-line. The distance from the dam to the gap in the range, by the course I have marked for the pipe-line, is about 10½ miles, and the fall per mile 64 feet. If the service reservoir were constructed at this point a 6-inch pipe would supply it at the rate of 380,000 gallons per day (some authorities give higher discharges, up to 420,000). It might, however, be better to construct a service reservoir nearer the town, as the distance from the gap to the railway station is 2½ miles.

E. B. Price,  
Esq., M.I.C.E.  
20 Dec., 1895.

A fairly good site can be found on a hill in the recreation reserve, near the rifle range. The length of pipe line to reach this spot would be nearly  $1\frac{1}{2}$  miles, and the distance from the railway station 1 mile. This is, however, a matter for the surveyor to decide in consultation with the Municipal Council. For the purpose of estimate, I have taken that the service reservoir will be on the level ground at the summit of the range.

On the map that accompanies this report I have marked the general course of the pipe-line in red. This track is fairly easy, and follows Crown lands and public roads where possible. About 5 miles, however, would be through private land (provision for the resumption of a narrow strip being made in the estimate).

It is possible that a shorter pipe-line may be found by survey, and in order to assist whoever is sent to do this work I have had the features put on to the map. I am inclined to think, however, that the pipe-line as shown in red will be found the cheapest in the end. It would not pay to shorten the pipe-line at the expense of so much loss of head as would entail a larger pipe being used.

A very great saving has resulted from being able to use so small a main as 6 inches in diameter, which will actually discharge 80,000 gallons more than what the consumption is estimated to be for double the present population.

This excess will go to compensate for loss through friction of rivet-heads.

On actual surveys being made it may be found that my aneroid levels are not very correct. I do not, however, think the fall will be found much less than what I have stated, as my levels were checked up and down on two different days, on the latter of which the barometric pressure was wonderfully steady. With the same instrument in the case of Junco Water Supply the maximum error was only 25 feet.

The general course of the pipe-line is through easy country. The get-away from the dam for a few hundred yards is difficult, the pipe having to pass under the boulder shown in one of the photos. Owing, however, to the sudden fall of the land the pipe soon reaches the top of the spur, where the ground is sandy and free from rocks for half a mile. The curve across the end of the spur and the drop into the creek will be more difficult, but from thence onward the course is easy till the limestone quarries are reached, beyond the second crossing of Moore Creek. Here the surveyor must select the route most free from rock, shortening the pipe-line as much as possible without interfering with the hydraulic grade. The remainder of the pipe-line to Tamworth is through easy red-soil country.

After the first crossing of Moore Creek the statical head on the pipes will be about 650 feet, and will remain pretty constant for the next 4 miles, as the line follows the base of the mountains. At the second crossing of the creek the head will be about 950 feet, and from thence it decreases to 700 feet at the service reservoir.

Owing to the great pressure to be resisted, it is important that the pipe should not be larger than necessary.

The pipe I would propose would be 6 inches in diameter (side to side, and not from rivet-head to rivet-head) of  $\frac{1}{4}$ -inch steel double rivetted, spigot and socket similar to those supplied for Junco Water Supply, only  $1\frac{1}{2}$  inches smaller. I would, however, recommend that a recess should be given to keep the lead-joint from blowing, and that the pipes should be dipped into asphaltum composition of a tougher nature.

The bursting head of a 6-inch steel pipe  $\frac{1}{4}$ -inch thick may be taken as over 3,000 feet.

The safe working head in England would be taken as about 833 feet, while in America 1,500 feet would be allowed.

I do not think, therefore, that the pipe need be any thicker than  $\frac{1}{4}$  inch, even where it crosses the creek the second time under a head of 950 feet.

As to the quality of the water above the falls in Moore Creek there can be no question. The gathering ground is generally granite and too poor ever to be used for anything but grazing purposes.

The water appears to be very soft and is beautifully clear. I had no bottle with me or I would have taken a sample for analysis, but really it is not necessary.

Should a sample be taken at any future time care should be exercised that it is taken from above the falls, as a sample taken low down in Moore Creek would contain lime, as well as other minerals, from Back Creek.

There is one important advantage which this gravitation supply will possess, viz., that it will be available for the production of power.

The streets of Tamworth are lit by electricity, which is generated by steam power. The plant is owned and worked by the Municipal Council, and there is no reason why an auxiliary generating station should not be established at the proposed service reservoir.

As previously stated, the proposed 6-inch main will discharge 80,000 gallons in excess of what the requirements of Tamworth will amount to for many years to come. It will, therefore, cause no inconvenience if the discharge is checked back (for, say, five hours a day), sufficiently to raise the pressure in the main.

Allowing a difference of 700 feet in level between the storage and service reservoirs and a length of  $10\frac{1}{2}$  miles of 6-inch pipe the full discharge will be at the rate of about 265 gallons per minute, and the pressure at the outlet zero. By contracting the outlet till the discharge is reduced to 150 gallons per minute the pressure will be raised to about 205 lb. to the square inch. Theoretically this should produce 21 horse power. With a well-constructed "Pelton wheel" an efficiency of 85 per cent. will be obtained, or an actual horse power of 18. No loss of water will result, as, after driving the "Pelton wheel" the water will fall into the service reservoir, the only difference being a reduction of 6,900 gallons per hour in the rate of supply to the service reservoir, which would not be missed, as the power would only be required for a few hours a day.

Though 18 horse power would not be sufficient to light the whole town it would materially assist.

Moreover in wet seasons when the creek is running strongly and not so much water being used for domestic purposes, an additional 19 horse power could be obtained by allowing 17,400 gallons per hour to run to waste in the river through the reticulation pipes. By having, therefore, two power stations, one at the service reservoir, and the other near the present generating station, a total of 37 actual horse power would be available at a cost of 17,400 gallons per hour to run to waste.

Unless a 9-inch pipe is laid from the service reservoir, the power will be considerably reduced I think, therefore the 9 $\frac{1}{2}$ -inch steel pipe which was sent to Tamworth for the pumping main should be utilised, the remainder of the town connection being made up of the 6-inch cast-iron pipes which will be to spare from the eastern end of the town. I need hardly point out that this additional 19 horse power would only be available for a portion of the day, as otherwise the service reservoir would lose more than it gained—as, however, the electric light is only needed for, say, five hours a day, this would not matter as the loss would only amount to 87,000 gallons, leaving about 258,000 gallons for domestic and other requirements.

As the estimated consumption is based on a population of 10,000 it would be quite safe for Tamworth to count on having 90,000 gallons per day to spare for many years to come, even in the driest seasons.

By the time the population of Tamworth reaches 10,000 so much electric lighting will be required that the 37 horse power will not be of so much value—but at present it should be sufficient to light the whole of the streets.

This question of electric lighting should be carefully considered when the plans are being prepared, and the work designed so that no additional work or alterations will be required in case the council decide to utilise the water power.

I have prepared the scheme and estimate so as to include all the pipes at present lying at Tamworth.

Owing to the service main coming into the town at the western end, it will be possible to do away with about  $1\frac{1}{2}$  miles of unproductive 6-inch reticulation pipes at the eastern end, and utilise them, together with the wrought-steel pumping main, for the connection between the service reservoir and the town.

The estimated cost of the works is as follows:—

<i>Estimate.</i>	
Storage reservoir (capacity 28,000,000 gallons) .....	£2,700
Pipe main (6-inch steel— $10\frac{1}{2}$ miles) .....	8,610
Service reservoir (500,000 gallons) .....	1,350
Reticulation and service main (pipes already provided) .....	14,260
Land .....	310
Surveys, engineering and contingencies .....	2,723
Total .....	£29,953

(Say) £30,000.

The cost of the pumping scheme was estimated at £22,500, and this amount was approved of by the Public Work Committee,

Subsequently

Subsequently the amount of reticulation was considerably reduced, and the price of labour having fallen, the work would probably have been carried for somewhat less, even making allowance for compliance with the conditions as to testing of drift imposed by the Committee. F. B. Price,  
Esq., M.I.C.E.

The estimated working expenses of the pumping scheme were £560, which, capitalised at 4% and added to the cost of the scheme, will bring it above that of the proposed gravitation supply. 20 Dec., 1895.

436. Is this as regards the scheme now before the Committee? No; it only deals with the amounts and quantities in a general way. The site of the dam under consideration of the Committee is placed higher up the creek.

437. Do I understand from your remarks that the difficulty in regard to the gravitation for Tamworth hitherto has been the absence of sufficient force to carry the water over the range? Yes.

438. Can I further infer that that difficulty would still exist, were it not that by the use of steel pipes you have a conveying power sufficiently strong to stand the extra force made necessary by these ranges? Yes; if we had to use cast-iron pipes to stand a 1,000-foot head, the cost would be so much that it would simply put the scheme out of the range of possibility.

439. You say there is a fall of 700 feet from the proposed catchment area to the foot of the cliff? Yes.

440. What is the height of the highest intervening range between the bottom of the dam and the town of Tamworth? 700 feet.

441. You mean to say that the water has again to rise 700 feet? No; the height of the range at the back of Tamworth is about 320 feet over the railway station—that is the highest intervening point on this line.

442. What is the height on the crest of the ridge? Approximately about 540 feet.

443. And the next in height to that is the one you pointed out on the permanent common;—as a matter of fact at the point where the service reservoir will be is viewed hydraulically as the highest point? Yes; that is the point nearest the town.

444. That is to say that the one which is physically the lowest point is hydraulically the highest? Yes; because it is furthest away from the storage reservoir. It is the ruling point in the whole scheme.

445. We were led yesterday to imagine that the other was? You can lower the other as much as you wish by altering the course of the line.

446. We had evidence yesterday which, to my mind, was directly in opposition to that;—we were led to understand that the crest of the range was the highest point? The crest of the range is the first obstacle to be met with. It is possible to lower that as I said, but it is not possible to lower the second. In the case of the first obstacle you can take a different route, but it would not be advantageous to do so, because you would then get the pressure on the pipes where you do not want it, besides lengthening the line.

447. How far is the reservoir from the second obstacle? I put the service reservoir at the second obstacle in my preliminary sketch. The present position of it is nearer the town.

448. How far is that from the 320-foot obstacle? It is not quite 1 mile nearer the town.

449. You proposed originally to have the service reservoir on the top of that 320-foot range? I left it to the Municipal Council. They could either have it there or where it is at present.

450. What is the height at which it is now proposed to be placed? About 240 feet over the railway station.

451. Then there will be a lessening in the head of about 80 feet? Yes.

452. I have been looking at the photographs handed in to see if there was any view of the cataract? I think it is shown in one of them.

453. Just now you said that Mr. Poate supplied you with the plan of the catchment area from the original plans? He did not exactly supply me with a plan, but he spent some time with me in going over the original plans in which the water-sheds are marked, which we transferred to this plan.

454. Are the original plans that you refer to the original plans made by the surveyor of the district? Yes.

455. The pipe you recommend for this work is a 6-inch one, is it not? Yes.

456. But the size of the pipe to be used in carrying out the scheme is a 7-inch? Yes; the reason for the change is that the Council asked us to give them power enough for the generation of more electric light.

457. You think that with the increased size of pipe, providing that with the increase of the size of pipe the strength of the pipe is proportionately increased, that there is an increase of water power up to a certain point? I worked that out some time ago. I hand into the Committee statements giving particulars of discharges of 6-inch and 7-inch pipes, with a fall of 64 feet per mile; and showing the horse power to be derived from the water supply by using electric accumulators. They are as follows:—

## TAMWORTH WATER SUPPLY.

(Moore Creek Gravitation Scheme.)

TABLE giving particulars of discharges of 6-inch and 7-inch pipes with a fall of 64 feet per mile, calculated with Pollit's Slide Rule (based on Box's formula).

Diameter of Pipes.	Discharge in gallons, with fall of 64 feet per mile.			Surplus supply per 24 hours.	Fall per mile required to give 300,000 gals. per day.	Surplus head available for power, per mile.	Total head derived from 11½ miles of main available for power.
	Per min.	Hour.	Day of 24 hours.				
6 inches	270	16,200	388,800	88,800 gals.	40 feet ...	24 feet ...	276 ft. = 118 lb. sq. in.
7 inches	395	23,700	568,800	268,000 gals.	20 feet ...	44 feet ...	506 ft. = 217 lb. sq. in.
Consumption provided for ...	208½	12,500	300,000				

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TAMWORTH WATER SUPPLY.  
(Moore Creek Gravitation Scheme.)

TABLE showing horse power to be derived from Water Supply by using Electric Accumulators.

Diameter of Pipes, in inches.	Gallons per minute (discharged.)	Effective head.	Horse power.			Total h. p. hours stored in accumulators.	Effective electric output of accumulators per hour for five hours.
			Theoretical.	Pelton wheel.	Generator.		
6 inches	208	276 feet	17	14½	12½	294	50 h.p.
7 inches	215	506 feet	33	28	23½	570	97 h.p.

NOTE.—These powers are calculated by using Box's formula, and allowing an efficiency of 85 per cent. to "Pelton wheel," "generator," and electric accumulators, respectively.

458. What is the proposed capacity of the service reservoir? 500,000 gallons.

459. Do I understand you to say that if it is proposed to light the town by electricity the capacity of the service reservoir is so limited that it would be necessary to dissipate a large quantity of water—as far as I can see from your figures somewhere about 87,000—through the reticulation pipes over that which is necessary for the generation of the electric light? I think your question refers to my first proposal, which was to light the town direct without the aid of storage batteries.

460. I understand you to say that it would not be possible to use sufficient water power to generate electricity for the supply of the whole town unless a large quantity of water were allowed to run to waste through the reticulation pipes? No; the steel main will discharge into this reservoir on the top of the hill, and instead of letting it discharge at full bore, you close it by means of a jet—you put a nozzle on to the end of it.

461. That would increase the pressure on the pipe, would it not? Yes, that is what you want.

462. And would that be dangerous? No.

463. I think you told us what quantity of water would be necessary to generate sufficient electricity to light the whole town? 300,000 in twenty-four hours is what is required.

464. That is what is supplied? Yes; you do not waste any water. If you wish to generate 97 h.p., and you have 7-inch pipes, you must run 300,000 gallons through into the reservoir in twenty-four hours.

465. The reservoir has a holding capacity of 500,000 gallons? Yes.

466. Did I understand you to say that there were some subsidiary reservoirs to be constructed in connection with the electric-lighting? I think not.

467. *Mr. Humphery.*] Have you provided for an ample water supply and sufficient power for electric-lighting purposes, and complied with the requirements of the Council in regard to their electric-lighting scheme? The scheme before the Committee provides sufficient water for the town, and sufficient power to not only light the streets but all the important buildings in the town.

468. When you say that you have a reservoir to contain half-a-million gallons, and the consumption will not exceed 300,000 gallons, are you speaking of the present consumption or of the probable consumption in the future, with the population of the town double? Of the probable consumption of the future.

469. The present consumption is about 130,000 gallons, is it not? Yes.

470. That being the case, will it be necessary to run through your pipe for providing an electric power 300,000 gallons daily? Yes; that provides for the increase of the town.

471. But dealing with the town as it is at present—will 130,000 gallons give you 20-horse power? Yes.

472. As a matter of fact, at the present time it would not be necessary that any water should go to waste, because the supply is more than would be required, and the passage of 130,000 gallons through the pipe would supply all the electric-lighting needed? Yes.

473. With regard to the cost, you told the Committee that you had already stored a supply of pipes ready for use in connection with this reticulation;—how did you estimate them? I did not estimate them. I took the actual cost, but allowed so much for laying them.

474. Can you speak of any scheme similar to the one under consideration;—do you know of any similar scheme that has been carried out? Yes; the one at Junee.

475. Has the Junee dam been completed? All but plastering the top of the dam.

476. What distance have you brought the water in that case? Twenty-one and a-half miles.

477. What is the daily delivery? 304,000 gallons.

478. Are the pipes used steel pipes? Yes.

479. What head have you there? The maximum head there is 630 feet. The maximum head of this scheme is close on 1,000 feet.

480. In preparing these figures for the consideration of the Committee, have you been guided by the actual cost at Junee? Yes; I took the cost at Lithgow, Armidale, and Junee. The price allowed for concrete here is a good deal higher than any of them.

481. Then the estimate supplied to this Committee will exceed, if anything, the actual cost? The estimate of £35,000 supplied to the Committee will more than do the work.

482. You are satisfied that if the scheme is carried out it will be a success? Yes.

483. How much have you provided for the dam at Tamworth? You had better let Mr. Davis give you those details.

484. As to the quality of the water—have you taken any steps to test its purity? I did not myself, but the Mayor of Tamworth had an analysis made of it, and it turned out to be splendid water. I think Mr. Davis also got a report on it from Mr. Hamlet, who says that it is especially good water.

485. What data had you for the estimate for the area of the water-shed;—did you make a personal examination of the whole place? I was over some of it on horseback, but I got the original plans from the District Surveyor, Mr. Poate. They show every creek, and we marked the water-shed from that on to this.

486. *Mr. Wright.*] Is the catchment area alienated? A great part of it is. One side of the river is an annual lease; it is wretchedly poor country.

487. *Mr. Humphery.*] Did you make any test as to the volume of water falling over the cliff? When I gauged it, it was about 70,000 gallons per day.

488. Can you conserve the whole of the water falling over the cliff? We can only conserve a hundredth part of it. E. B. Price,  
Esq., M.I.C.E.
489. My question is on the assumption that there is not sufficient fall in the dry season? You cannot impound anything like what falls. 20 Dec., 1895.
490. My meaning is this—supposing that in a very dry season you have only 50,000 gallons per day falling, what proportion of that can you impound in your reservoir? The whole of it.
491. In answer to a question put yesterday, it was stated that if there should be no rainfall for 116 days there would be sufficient in the dam to supply the town during that period? Yes.
492. So that if the worst came to the worst you would always have at least 50,000 gallons a day? Yes. I may mention that I do not think it is likely that the storage reservoir will be required more than one year in every three.
493. *Mr. Hoskins.*] Mr. Humphery asked you respecting the Junee Water Supply;—is the dam there completed? It is completed all but the plastering of the top.
494. Have they succeeded in impounding as much water as they expected? They have not closed the valve yet.
495. Would there be as much water caught there as at Moore Creek? The catchment is just exactly four times as great as at Junee.
496. Have you been over the whole extent of this proposed water scheme from the waterfall right down to Tamworth? Yes.
497. Have you been over it yourself? Yes.
498. And you prefer this scheme to a pumping scheme? Yes. It depends on what would be the cost of the pumping scheme, though.
499. In your evidence before the last Committee, you said that you preferred a pumping scheme? If this gravitation scheme was to cost £50,000, or even £45,000, I would prefer a pumping scheme; but if it cost anything below £40,000 I would prefer a gravitation scheme.
500. With respect to the dam, will you not have to make a cement bottom for it, seeing that the granite there is very jointy, and there are very large crevices between the boulders? The granite round the immediate site of the reservoir is rather solid.
501. You would have a large body of water impounded above the dam besides that immediately against the wall—is not that composed of jointed granite rock with large crevices? It is wonderfully close granite—in fact, it is like one flat rock, every piece of stone having been swept down over the falls with the rush of water.
502. Over the extent of 23 acres? All the way up the creek for a mile I could not see a boulder of any size.
503. Moore Creek is a tributary of the Cockburn River, is it not? It runs into the Attunga, 14 miles below Tamworth.
504. *Mr. Clarke.*] Did you not, on a former occasion, recommend a pumping scheme in preference to a gravitation supply from the Cockburn River, as recommended by Mr. Gipps? That is a very different scheme to this.
505. I suppose you were responsible for the scheme recommended by the Public Works Committee not being carried out? I was instrumental in stopping it.
506. Then you say that this scheme is preferable to any other? Very much.
507. What quantity of rain at the present time would fill the dam that you say would contain 35,000,000 gallons? A thunderstorm of 2 inches would fill it ten times over.
508. Are the pipes through which it is proposed to carry the water from the reservoir into Tamworth to be steel pipes? Yes, riveted or welded; it is not decided which.
509. Do you consider them preferable to cast-iron? They are very much preferable when there is heavy pressure. A steel pipe has a certain amount of elasticity; a cast-iron pipe has not.
510. Will they last much longer than the other pipes? It is very hard to say how long a steel pipe will last; they have not been in use long enough to say; it all depends on the coating. If the asphaltum is knocked off, or is badly put on, they will corrode quicker. If it is well put on there is no saying how long they will last. I have seen asphaltum over 1,000 years old, and it appeared to be as good as ever.
511. I suppose there is no danger of contamination at the catchment area, is there? No; there is only one person living on the watershed, and he is a shepherd, I think.
512. Is there any country fit for farming purposes between the proposed reservoir and Tamworth? Yes; there is some farming land at the summit of the range, between the creek and the town. There is some very good red soil country there.
513. *Mr. Trickett.*] Would you mind giving us a little more detail as to what caused you to go from the old to the new in regard to this question of water supply? I always had my doubts about the pumping scheme, because I never thought that the country was properly explored. I went so far as to say so to Mr. Darley, but he thought that as so many officers had been there from the Department, and so many private engineers had been over the country, that it must be well explored. When Mr. Hickson came into office, and the questions of the pumping engines came before him, I suggested to him that before he accepted them he should let me make another exploration of the country, as I said that I had an idea that something might be found. I thought that in such a mountainous region the site for a gravitation scheme could surely be got. Mr. Hickson told me to go and examine the country, which I did, with the result as stated in my report.
514. Then all through you desired to obtain a gravitation scheme in preference to a pumping scheme? Yes; I would always give a gravitation scheme the preference over a pumping scheme, provided it could be constructed at a reasonable cost.
515. Had you any reason to change your view as to the purity of the water to be obtained under the pumping scheme? No; my opinion was borne out by Mr. Hamlet.
516. As far as you are concerned, you are still of opinion that first-class water could have been got at the drift? Yes.
517. Have you got the quantities for the expense of the catchment dam? No; Mr. Davis would have them.
518. You have given us the minimum flow of water at the fall in the dry season as 40,000 gallons per day. Have you been able to ascertain what would be the maximum flow of water? I have seen proofs that the water has gone over there 10 feet deep.
519. Was that in consequence of continuous rain, or after a heavy shower? A thunderstorm of 2 inches would make it 10 feet deep in that gorge. 520.

- E. B. Preece, Esq., M.I.C.E.  
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520. I want to know particularly whether you think the ground that will be covered by these 35 acres of storage water is of a good holding character? You cannot have any better holding ground. It is superior to Prospect or the Junee reservoir.
521. Therefore you think the scheme is sound in every way? You would lose no water from that reservoir, except by evaporation.
522. Some questions were asked by Mr. Hickson yesterday with regard to the life of those steel pipes. What has been your experience in that respect? My experience on steel pipes extends over only about ten years. I have, however, read a great deal about them. At the time of the Junee inquiry I went into the question thoroughly, and I looked into every book on the question that I could find. The longest life that I could find any mention of was forty years, and they were wrought iron pipes. In America there are some wrought-iron pipes thirty years old. It was at the time the country was engaged in the war and the price of cast-iron pipes went up enormously and they made pipes out of sheet-iron, which they dipped in Portland cement. In France they found that asphaltum was better, and they dipped wrought-iron pipes in it, and now steel pipes are dipped in it.
523. Then you consider that the life of these pipes is almost indefinite? Providing the coating is put on well. This is so important that I would feel almost inclined to have a chemist watch them being dipped.
524. Is the cost of dipping included in the present instance? Yes.
525. Is it a heavy item? The Junee pipes cost £24 19s. per ton delivered at the railway ready dipped.
526. Is that the most modern way of treating these pipes? Yes.
527. Does the creek water affect these pipes in a very marked degree? No water will affect the asphaltum, but if the asphaltum gets knocked off then the softer the water the more they are affected; hard water does not affect them so much.
528. You remember that in the Junee scheme when the supply became very low the water became of a very brackish character; does that prevail here? No; when there was simply a little trickling in the creek the water was perfectly pure.
529. How long do you estimate it would take to have these works carried out? About two years. The pipes are yet to be made, and you must import the steel.
530. You say the steel pipes must be imported? Yes; import the plates. They could have the work completed and the water turned on in two years.
531. The pipe main from the catchment dam to the service reservoir takes a very tortuous course? It does.
532. Is that absolutely necessary for the purpose of having the pipe on the ground all the way there? Yes; the bends are necessary to avoid rough ground. There is nothing so expensive as laying a pipe in ground where you have to cut through boulders. It is far cheaper to get smooth ground, even if you have to go round a bit.
533. One part of the line runs through private land, does it not? Yes.
534. Would they not have to be compensated? Yes, I think so.
535. The question of compensation for putting a pipe through is not very large, is it? No; I think it is about £2 per acre, which is about £4 per mile.
536. What width do you take in along the line? About 16 feet.
537. Do you resume that portion? We resume it, but we do not fence it.
538. Would there be any cost for severance? We have paid no severance at Junee.
539. *Mr. Lee.*] Regarding the life of these pipes, do you think they would last 100 years? I would not put it so high as that unless extreme care is taken with the coating.
540. You are aware that if this scheme is carried out it will be under the Country Towns Water Supply and Sewerage Act, under loan from the Government, to be repaid in 100 years. I wish to ask in what position the project will stand? The way I have always looked at it is that in (say) fifty years the town would have to increase its supply by laying an additional pipe-main.
541. But under the primary working provision for repayment of interest, and so much for repayment of capital, there is no provision made in that for the maintenance of the water supply? I think I have provided for maintenance. I know I allowed £200 per year for expenses in the case of Junee.
542. Who is supposed to pay the cost of maintenance? The Council.
543. Independent of the charge levied by the Government? Yes.
544. Then your proposal is on the assumption that in fifty years time the population will be doubled, or at any rate increased largely;—what provision have you made for increase in the supply? You could put three or four more dams, if necessary, on that creek higher up, holding 30,000,000 or 40,000,000 gallons, and could save 100,000,000 gallons if you wished quite easily.
545. But suppose in that time that portion of the creek has been settled upon, and become liable to contamination? I hardly think that you will ever see settlement on that creek—it is too poor.
546. That is the way you suggest provision may be made for additional supply? Yes.
547. The experience is that as population increases the consumption will be very much larger;—then the revenue derived by the Council will be proportionately increased to meet the demands of the Government? Yes.
548. And to provide for an increased supply they would have to put in additional pipes? Yes; it would cost them £1,000 a mile to put in a little larger piping.
549. What provision have you made for the outlet of surplus water? It flows over the top of the dam.
550. Do you estimate a concrete dam will be of sufficient strength for that purpose? Yes; we always allow concrete dams to be overshot dams. We have had an overshot concrete dam at Goulburn seven years, and it is as good now as when it was put up.
551. Is the wall of this dam to consist entirely of concrete? We intend to build it the same as the Goulburn and Junee dams. We put a layer of concrete in first and then we put in big stones bedded in concrete, and then with a layer of very rich concrete about 18 inches thick on the inner face.
552. Would it require very careful working in putting it down? Yes; it requires to be very carefully done.
553. Have you engineers in your Department who have carried out this work satisfactorily in other places? Yes, Mr. Harold Blomfield. I do not think you would get a more careful man than he is.
554. Supposing the dam were to give way, would it endanger the town of Tamworth? No; it would flow about 15 miles below Tamworth into the river.

555. I would like to know how it is proposed to hold this catchment area—is it to be specially reserved for water purposes? I do not think it is proposed to specially reserve the whole area, but I presume that any Crown lands there would be gazetted as water reserves. That is what has been done at Junee.
556. Supposing that in the course of a few years a mineral field broke out there, particularly an alluvial field, in which the water would have to be used—in that case how are you to keep your water free from contamination? You cannot preserve it from contamination in that case, unless you put a small reservoir higher up to act as a settling dam.
557. That would mean an additional cost? It would, but not very much. It might be done with rough stones and logs for about £500. We did that in the case of the new scheme for Armidale. We built some log dams higher up to catch the sand, and they worked well.
558. I notice you have made no provision for filter dams? No; we have filter dams in other places, and they are never used.
559. You have some at West Maitland, have you not? Yes; but the water there is very different from this.
560. But might not this be the same under some circumstances? No.
561. You know that if water suddenly rushes over the country and goes into this reservoir it will be in a dirty state? It might be a little dirty, but along the course of the creek it flows through sand and over little water falls, and by the time it would get to the dam it would be pretty well purified.
562. From the Engineer-in-Chief, it would appear that you have entirely discarded these filter dams as quite unnecessary? Quite unnecessary.
563. Do you not think it would be very much better to put up an additional service reservoir? I do not think it would be necessary; we have no use for it. The only time that an additional reservoir might be required is when a pipe bursts, and I have never heard of a steel pipe bursting yet.
564. Are pipes not likely to freeze in the winter season? No; not in this country.
565. But as a matter of fact they do; I have known them to? They might at Kiandra.
566. I have known them to in this very locality? Not if they were underground; the ground is a great protection. It is very rarely, even in England, for an underground pipe to freeze. The fact of the water flowing through them prevents that.
567. What do you consider would be a wise supply of water to keep in the reservoir? It would always be full, except in the middle of the day perhaps, when there was a draw upon it.
568. It is supposed to hold 500,000 gallons, is it not? Yes.
569. And that, according to the present population to be served, will equal a three days' supply? Yes.
570. Supposing a pipe were to burst, and there was some difficulty and consequent delay in discovering the fracture, what position would the people be in then? There would never be any difficulty in discovering fractures.
571. But what would be the result if the water ran out? Well, the people would be in just the same condition as they are at present. They would still have their present tanks.
572. Do you not think it is drawing the thing pretty fine to leave the people to this limited supply? I do not think so.
573. You will admit that a severe accident to a pipe would put the people in a very precarious position? No; if the pipe were to burst it could be put in again in one day.
574. But supposing that the reservoir should be empty for only one day, would that not take away the hydrant power for all the houses in the town, and consequently leave the insurance offices without the assistance of water to extinguish any fires? Yes; I presume that if any accident like that occurred the Council would put the people on a limited supply (say) 100,000 gallons a day, and then the water would last five days.
575. *Mr. Hassall.*] Were you right through that country round the catchment area where you propose to build your dam up to the head of the creek? I have been a good way up. I came in from Moonbi side.
576. That is from the road running up through Moonbi? Yes; I also came through Back Creek way. I may say that I do not know anything about the catchment area up at the extreme end of it. I have never been up there.
577. You could not say whether the creek is fed by springs, or whether it is fed by the rains from the hills? No; I saw springs lower down though.
578. Then you know as a fact the creek is fed by springs? Yes.
579. You say you made a pretty exhaustive examination of the country up towards Nundle;—I suppose you also examined the Cockburn River site? Yes; there was a splendid supply of water there, but no head. I also examined some springs which I have since heard called the Moonbi springs. I gauged them, but I found that the supply from there was not sufficient for present requirements.
580. In all the country you examined you could not find as good a water supply with the same facilities for impounding and catchment as you discovered at the head of Moore Creek? I could not.
581. The pipe you propose to use in this scheme is a 6-inch one is it not? No. 7.
582. Could you bring as much water in a 6-inch pipe by having a larger pressure than could be brought in an 11-inch pipe as proposed by Mr. Gipps' scheme? Yes.
583. With regard to the question of cost the pumping scheme was estimated to cost £20,500, was it not? Yes, it was.
584. The present scheme is estimated to cost £35,734? Yes, with a 7-inch pipe.
585. Have you any idea what reduction would result from a 6-inch pipe being used in place of a 7-inch pipe? Something over £2,000.
586. You agree that it would be better to have a gravitation scheme to cost £33,000 than a pumping scheme to cost £22,500? Yes.
587. For what reason? If you take out the cost of working the pumps, engine-drivers' wages, wear and tear of engines, &c., and capitalise it, it would bring the cost of the pumping scheme up to more than the gravitation scheme.
588. Then the tax on the people would be greater under the pumping scheme than under the gravitation scheme? Yes.
589. And for that reason you now advance the present scheme in preference to the pumping scheme? Yes.
590. With regard to the site for the dam, you say it is one of the best in the Colony? It is one of the best I have ever seen, being on solid rock.

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591. In taking a site for the dam, were you guided by surface indications? Yes, for the preliminary report; but for the detailed report trenches would be cut to test the ground.
592. From your examination of the locality, you say that the bed of the creek where you propose to erect the dam was solid rock? Yes; the site I chose was solid rock; but I may mention that the site at the present time is some 900 feet further up the creek.
593. With regard to the surplus water, you propose to have an overshot dam? Yes.
594. And being built on solid granite, you do not think the force of water would have any effect on it? No.
595. Do you put boulders at the back to break the force of the water? We do at Goulburn, but we do not require to do so here.
596. You estimate that the service reservoir will have a capacity of half a million gallons, and that it will cost £1,350? That was my estimate. I do not know what the new estimate is. I may say that that was the actual cost of the Junee reservoir.
597. Is the reservoir at Junee the same size as the proposed one under consideration? Yes.
598. A question has been asked with regard to what would happen to the Town of Tamworth supposing there should be any intermission in the supply and a consequent exhaustion of the service reservoir,—what in your opinion would it cost to double the service? It would cost about one-third more.
599. For (say) £2,000 you could put down a service reservoir that would hold 1,000,000 gallons? Yes; I think, though, that 500,000 gallons is sufficient to last during the period of repairs. It does not take long to put a pipe in, because there are always pipes left along the line of route.
600. Taking into consideration that you would use (say) 300,000 a day from your service reservoir, and that it would only last you two days at the outside, do you think that the repairs would be effected in two days? Yes; the repairs can be done in one day. It would take another day to fill the pipe gradually.
601. You do not think it advisable to go to the extra expense of constructing a larger reservoir? No; if they were cast-iron pipes I would go for a bigger reservoir.
602. With steel pipes you do not think it necessary? I do not.
603. *Mr. Fegan.*] Being the pioneer of the scheme, I suppose you have been complimented by the Minister for originating it? Well, yes.
604. How long have you been in the Department? Ten years.
605. From an answer to a question by Mr. Black in reference to electric lighting, I gather that there is no necessity for any waste of water in giving sufficient power to light the town? No; if there are storage batteries there is no necessity to waste any water.
606. Can you give us any reason why this country was not explored sooner when the Department was thinking over a scheme for the water supply of Tamworth? It is very hard to say. It is partly owing to the way the scheme was got up. About fifteen years ago it was first started. At that time the Council wanted a reservoir to impound some water at the back of the town, but when trial shafts were sunk at the site of the dam they found no bottom. An officer was sent up from the Department and he was there some months, but he never inspected a great deal of the country, and instead of looking further out for a suitable site they went to the river and pumped. I may say that at that time there were no such things as steel pipes known, and this scheme would be out of the question without steel pipes.
607. Would not cast-iron pipes do? No; cast-iron pipes have to be about three-quarters of an inch thick to resist the pressure, and then they would cost £1,800 instead of £800 per mile.
608. But the stress in a gravitation scheme is not nearly so high as in a pumping scheme? No.
609. Therefore, being a gravitation scheme, it would require three-quarter inch cast-iron pipes? Yes; I calculate it takes three-quarter inch iron pipes to be safe.
610. What lengths of pipes have you to lay? Eleven and a half miles.
611. Can you tell me how much you think it would be possible for the Council to place to a sinking fund under this new scheme—something like £700, would it not? I think about £500 a year.
612. In an emergency such as the bursting of one of these pipes, they could put down a double line of pipes to replace them if necessary? You can duplicate the present pipe for £10,000. The Council should be able to save enough money to provide for duplication in about twenty years.
613. *Mr. Roberts.*] I understand that since Mr. Hickson was appointed Engineer-in-Chief for Public Works, you suggested to him that you should be allowed to visit Tamworth with a view to investigating this water supply? Yes; I think it was on the 10th April last.
614. It would be interesting to know what caused you to make that application;—were you dissatisfied with the previous scheme which had been adopted by the Parliamentary Public Works Committee? I was not dissatisfied altogether, but I began to think there might be something better. I had been frequently travelling to Armidale in connection with the new water supply there, and passing by the Moonbi Ranges, and when I saw those great mountains out there I began to think that surely there must be a possibility of getting a good site for a gravitation scheme.
615. You looked upon the cost of Mr. Gipps' scheme as far too high, did you not? No; far too low.
616. I understood you to say that it was estimated at £50,000? That is the cost of making a proper scheme. It provides for a pipe instead of a ditch.
617. Have you heard if Mr. Gipps has expressed any opinion on the present suggestion? I saw several letters in the Tamworth paper that was sent to me by some friend, in which Mr. Gipps still protests that there is no sight for a dam at the head of Moore Creek. Of course, the Committee can settle that matter when they go up there themselves.
618. You think that the present scheme is pretty well all that can be desired? It is an exceptionally good scheme.
619. *Mr. Wright.*] In speaking just now of a possible fracture to these pipes, have you made any arrangements for turning off the water? We have retension valves put in every 1 or 2 miles.
620. How long will it take to empty the pipes? A very short time.
621. How long would it take to refill? If the pipe burst it would probably empty the pipe-line for 4 miles, and the refilling would have to be done very gradually. It would take, perhaps, twelve hours.
622. *Chairman.*] The retension valves are automatic? Yes.
623. *Mr. Wright.*] In your statement I think you spoke about the possible electric lighting of Tamworth, and you spoke of the number of tons of power you would require—what was the number you said? It is reckoned in foot pounds. The number of horse-power hours would be 570.

624. Do you think that ninety-five horse-power is sufficient to drive the dynamos? It would require a Pelton wheel of twenty-eight-horse power, and that would be working twenty-four hours a day. E. B. Price,  
Esq., M.I.C.E.
625. Did you ever go into the question as to what it would cost for a Pelton wheel and electric dynamos, &c. The Pelton wheel would cost about £100, and there are two generators which would cost about £250 apiece. 20 Dec., 1895.
626. Do you think the Pelton wheel and dynamos can be put up for £400? Yes.
627. Under your scheme you are perfectly satisfied that you will have not only abundance of water for all possible contingencies, but also abundance of generating power to light the town? Yes.
628. You advocated the pumping scheme for Tamworth? Yes, in preference to Mr. Gipps' gravitation scheme.
629. Have you had any experience of pumping from river drifts? Yes; Dubbo is a case in point.
630. Would you be surprised if I said that 15 miles this side of Dubbo I saw the bed of the river drained with a galvanised hand-pump? That could not have been in the old bed.
631. Have you never known the river to be dry at Dubbo? No.
632. That is the only experience you have had? Yes, of river drifts.
633. Of course you are aware that the catchment of the Macquarie is very much larger than the catchment area of the Peel? It is very much larger.
634. I have taken the trouble to check your figures, and I find that an area of 22½ square miles gives you 350,000,000 gallons of water with a rainfall of an inch; so there seems to be no possibility of a failure? Hardly.
635. *Chairman.*] Will you prepare a brief statement of the four different water-supply schemes for Tamworth, giving the reasons why you rejected the pumping scheme, the Cockburn River, the Moonbi Spring, and Goonoo Goonoo schemes, for the information of the Committee at a later stage? Yes.

TUESDAY, 7 JANUARY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHREY.  
The Hon. JOHN DAVIES, C.M.G.  
The Hon. JAMES HOSKINS.  
The Hon. WILLIAM JOSEPH TRICKETT.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
ANGUS CAMERON, Esq.  
THOMAS HENRY HASSALL, Esq.  
FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Water Supply for the Town of Tamworth.

Edward Bellingham Price, Esq., M. Inst. C.E., Assistant Engineer, Department of Public Works, sworn, and further examined:—

636. *Chairman.*] The Committee asked you at their last meeting to state definitely the reasons why you rejected the water-supply schemes to which I then referred? Yes; my reasons are as follows:— E. B. Price,  
Esq., M.I.C.E.

*Pumping Scheme.*—The annual cost of working, if capitalised and added to cost of construction, renders the scheme more expensive than the proposed Moore Creek gravitation scheme. It also provides no power for electric lighting. 7 Jan., 1896.

*Cockburn River.*—The fall in the river is so slight that it would be necessary to go at least 17 miles to obtain sufficient head to supply the town, and a pipe fully 11 inches in diameter would be required to deliver 300,000 gallons per day. Even then the higher portions of the town would not be supplied. The cost of the scheme would be fully £15,000 greater than that from Moore Creek.

*Moonbi Springs.*—The elevation of the springs and of the creeks in the neighbourhood is not sufficient to supply the higher portions of the town, even by using a large pipe. The supply from the springs is quite insufficient, and cannot be increased, while that from the creeks would require to be impounded, and there is no site for a reservoir. The pipe-line would be longer than that from Moore Creek.

*Goonoo Goonoo and Nundle.*—Sufficient elevation cannot be obtained on any suitable stream in this direction without going an unreasonable distance.

637. *Mr. Davies.*] How did you come to make this discovery of a scheme at Moore Creek? I had an idea that Moore Creek, as it rises in the Moonbies, might come from a very high tableland. I noticed that there was granite formation obtruding through slate formation, and the experience I had gained at Juneec was that where that occurred you might expect to find a waterfall.

638. Did Mr. Poate, the district surveyor, give you any information as to Moore Creek? None, until three days after I had been to the place. I then called upon him and asked him to define the watershed, and he did so.

639. He did not suggest to you that the probabilities were that a gravitation scheme would be discovered by making an inspection at the head of Moore Creek? No. I never met Mr. Poate until three days after I had found this scheme was possible. When I informed the Mayor of it, he said, "We will call and see Mr. Poate"; and he afterwards gave me information about the watershed.

640. You were strongly in favour of the scheme originally proposed by the Department? I never was very strongly in favour of it. I thought it was a good pumping scheme—that was all I knew of it.

641. Was not your former evidence in favour of the scheme of the Department? I recommended the pumping scheme in preference to Mr. Gipps' gravitation scheme.

642. At that time, had you not a strong feeling in favour of pumping from the shingle or the bed of the river? Not in preference to a good gravitation scheme, if it could be obtained. The Juneec Water Supply was to have been a pumping scheme, but I turned it into a gravitation scheme.

643. *Mr. Hoskins.*] Do you think the new scheme at Juneec will answer? I think so, if we get a shower of rain.

644. *Mr. Davies.*] The scheme originally proposed for supplying Tamworth permanently with water was a pumping scheme? Yes.

645. And you gave strong evidence in favour of it? It was a good pumping scheme.

646.

- E. B. Price,  
Esq., M.I.C.E.  
7 Jan., 1896.
646. I believe you also advocated the scheme for the supply of water to Cootamundra? That was not my scheme.
647. But you supported it? Yes; I thought it was worth trying.
648. Also the scheme at Parkes? Yes.
649. Have not those schemes failed? Both have practically failed, and the wonder is that other schemes have not failed considering the dry year we have had.
650. One of your strongest reasons for advocating a gravitation scheme is probably the failure of the schemes to which you have referred? The pumping schemes referred to had not failed at the time of my first advocacy of a gravitation scheme. It is over a year ago since I first spoke of seeking for a gravitation scheme at Tamworth.
651. How does your Department propose to adjust the expenditure incurred in the supply of water to country towns in cases where the schemes have proved absolute failures? It is not right to say that the schemes have absolutely failed. They are still getting water from them, although perhaps not as much as is required, and when the rain comes the deficiency will cease.
652. Is there not a telegram in to-day's papers to the effect that one of these schemes has given out absolutely? I would not be surprised to hear it, the weather has been so dry. In my original report with reference to one of the works you refer to I said that the scheme was worth trying because it could be so easily turned into a gravitation scheme.
653. Would you obtain a sufficient head of water by the construction of a dam, to supply the people of Cootamundra? Yes. It would be an expensive dam, and that is why the pumping scheme was proceeded with.
654. From your experience at Cootamundra and Parkes, and one or two other places where pumping schemes have been adopted, you would not recommend the construction of any similar work for supplying country towns with water? I would not recommend any such scheme unless I had put down the trial shafts myself. It is no use mincing the matter, but the officers who put down the trial shafts gave unreliable returns. For instance, one shaft was made to show 24 feet of shingle. A shaft was afterwards put down there and it was found that there was no shingle.
655. Is the officer who did that work still in the employ of the Government? No; he has been gone for along while.
656. What were the trial shafts put down in the case of Tamworth? I do not think the trial bores which have been put down are to be doubted in any way as they were done by one of our most reliable officers.
657. I see you estimate a larger revenue under the new proposal than under the old one? I cannot speak definitely as to that, but I think there will be a larger revenue taking into account the value of the scheme for electric-lighting plant.
658. You are not in a position to say definitely whether the income will be larger than was estimated in the case of the previous scheme? I am sure it will be larger by the amount contributed for the electric-lighting power.
659. The expenses of the scheme now proposed will be less than those of the pumping schemes? They will be less by the cost of all the fuel used, repairs to the engine, drivers' wages, and possibly an extra shift in summer-time.
660. And the new scheme will enable you to supply water at a higher level? Yes.
661. Under this gravitation scheme you would be able to supply at the highest levels? To any height 700 feet above the railway-station by an additional service reservoir.
662. You believe it is the best and the most economical scheme which can be procured for supplying Tamworth with water? Yes.
663. Have you made an investigation into Mr. Gipps' gravitation scheme? I have been along the Cockburn River. I have not seen the site of his dam, but I have gone along the river and have taken levels, and I found that I had to go 7 or 8 miles further along it than along Moore Creek to obtain an elevation sufficient to supply the town.
664. You think that Mr. Gipps' scheme would not supply the higher levels in the town? No. I think that Mr. Gipps has agreed that his scheme would not supply the higher parts of the town.
665. With regard to the cost of the proposed scheme you saw Mr. Gipps' evidence I suppose;—do you think the work could be carried out for the sum mentioned? At the time of the last inquiry I made a rough estimate as to the cost of two schemes. The cost of Mr. Gipps' scheme was £46,700 if carried out with a pipe instead of a ditch.
666. Mr. Gipps' estimate being £17,000? Yes; Mr. Gipps only provided £5,000 for reticulation, while the Departmental scheme provides £14,000.
667. You are clearly of opinion that Mr. Gipps' scheme could not have been carried out for the amount he estimates? I think not. If I had found that a scheme could be obtained at Cockburn River I would have recommended it.
668. *Mr. Hoskins.*] Mr. Gipps proposes to bring his supply from the Swamp Oak Creek, I believe? Yes; but that is 17 miles from Tamworth.
669. *Mr. Davies.*] You propose to deliver from the main reservoir to your receiving reservoir by means of a 7-inch pipe? Yes; 6 inches was proposed in the first instance, but it was altered to 7 inches. The pipes used will be one-eighth of an inch of steel, exclusive of the coating. There will be a coating inside and outside of asphaltum, supposed to be  $\frac{1}{2}$  inch in thickness.
670. What will be the life of the pipes? They would last over fifty years if properly coated. Only an odd pipe here and there would go, perhaps one in twenty or thirty.
671. *Mr. Cameron.*] Is not this treatment of the pipes largely in the nature of an experiment? No. Similar pipes made of wrought iron instead of steel were laid in America thirty years ago, and are good to this day.
672. *Mr. Humphery.*] You say that the difference between Mr. Gipps' estimate of the cost of reticulation and the Departmental estimate is £9,000? Yes.
673. For how many miles of reticulation did Mr. Gipps provide? From 5 to 6 miles.
674. For how many miles have you provided in your estimate? For 19 miles, I think.
675. *Mr. Fegan.*] I believe that a steel pipe of  $\frac{1}{2}$  inch is equal to a  $\frac{3}{4}$ -inch cast-iron pipe? Yes. Cast-iron pipes for this scheme would require to be  $\frac{3}{4}$  inch thick.
676. They would be equal to steel pipes  $\frac{1}{2}$  inch in thickness? The steel pipes would still be stronger.

677. *Mr. Lee.*] When you were last examined I asked you whether you thought a three days' supply was sufficient to provide in the service reservoir? Yes; I think it is quite sufficient.
678. In view of the possibility of the population of Tamworth largely increasing, do you think your service reservoir will be sufficiently large to place the people of the town beyond all doubt as regards the supply? I think the service reservoir of 500,000 gallons capacity will be large enough for present requirements and for requirements ten years hence unless the town goes ahead very quickly. If that is the case a second reservoir can be added.
679. The present proposal is to afford a three-days' supply for the present population? Yes.
680. Supposing there were an increase of 50 per cent. in the population? Then we could construct another service reservoir. If there were an increase of 50 per cent. in the population they could construct an additional reservoir out of revenue.
681. But you think the reservoir now proposed will do for the next ten years? Yes.
682. Would the supply from the dam be sufficient to serve two reservoirs? Yes.
683. Through the pipes you propose to put down? Yes; the pipes we have provided will be large enough to supply double the present population of Tamworth.

E. B. Price,  
Esq., M.I.C.E.  
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Joseph Davis, Esq., M. Inst. C.E., Principal Assistant Engineer for Country Towns Water Supply and Sewerage, Department of Public Works, sworn, and examined:—

684. *Chairman.*] You are Principal Assistant Engineer for the Country Towns Water Supply and Sewerage? Yes.
685. If this work is carried out it will be done under your supervision? Yes.
686. Therefore, you are prepared to give us details as to the scheme? Yes.
687. How did you come to decide upon the exact position of your pipe-line? We had two things in view: first the shortest route, and then a uniform hydraulic grade. We have secured, I believe, the shortest route consistent with that.
688. Consistent with a satisfactory hydraulic grade? Yes.
689. Your pipe-line follows the road? In some places; in other places it leaves the road.
690. Why did you follow the road? Because it happened to come near the line we adopted. At the same time it would save any trouble with private owners.
691. The liability of the Department to pay compensation for the laying of pipes is a moot question? I am of opinion that we have full power to lay the pipes provided that if we do any damage we compensate the owner or occupier concerned.
692. Having that power, why did you follow the road? It saves a great deal of trouble, and at the same time it might save a little compensation. We might have to compensate persons to some extent.
693. Does not the line you have chosen increase the friction? Not materially.
694. Does not following the road materially reduce the head by increasing the friction? No, not materially. The water will flow round a bend of 120 degrees with friction equal to only the fraction of foothead.
695. But it takes a greater length of pipe? Slightly.
696. Supposing there had been no road there, how would you have taken the pipe-line? The only alternative would have been to follow the dotted line between  $7\frac{1}{2}$  miles and  $5\frac{1}{2}$  miles shown upon the plan. That is the only alteration which could possibly be made in the route.
697. If you had not been confronted by the question of compensation you would have followed the dotted line from the point A to B on the plan? Yes.
698. And if your Department comes to the conclusion that no compensation is necessary, that you have the power to put down these pipes on private land without paying any, you will follow the dotted line from A to B? When damage is done compensation must be paid.
699. How much do you lose by friction before you get to the reservoir? It depends upon the quantity of water discharged at the reservoir. I have prepared a table in connection with the electric power question showing this.
700. What I want to get at is the loss of head by friction between the dam and the service reservoir? There will be a minimum loss of 68 feet and a maximum to a discharge of 300,000 gallons of 204 feet.
701. Therefore, you will have a surplus head of 600 feet? In the first case of 670 feet and in the second case of 534 feet.
702. What is the reason for the difference between the reticulation in the scheme previously submitted to the Committee and that in the present scheme? Provision was made in the pumping scheme for  $22\frac{1}{2}$  miles. It was estimated to cost £17,415. We have provided in the present scheme for £14,151. That includes £1,000 of extra reticulation which will probably have to be carried out before the scheme is completed. If £1,000 is deducted from £14,151 it leaves a net provision for reticulation of a little over 19 miles.
703. What portions of the town of Tamworth have been omitted from the present scheme, and why are they omitted? Since the previous inquiry, in accordance with the desire of the Committee then expressed, a plan has been submitted to the local Council by the Department, and they have approved of the plan. I have it with me to-day. There have been some slight modifications, but the alterations have been made at the instance of the Council.
704. It is shown upon the map before the Committee? Yes.
705. Among your papers have you any documents showing that the Tamworth Council approve of the work? No.
706. But they have approved of it, have they not? No formal approval has been given, but we have had verbal communications with them which render it clear that they will approve.
707. Do they fully understand what the proposal is? The Mayor and one or two of the leading aldermen and the Council, as a whole, do, I believe.
708. Are they aware of the expense of the whole scheme? Yes.
709. And their liability under it? I think they are aware of that too. They know what they will have to pay to the Government.
710. Mr. Price in one of his reports recommended the use of 6-inch pipes; you have adopted 7-inch pipes;—will you explain the reason why? Mr. Price simply provided for 20-horse power to generate enough

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enough electricity to light the streets. Since Mr. Price made his report I have received a communication from the Mayor, and he therein requests that provision should be made for 100-horse power. With a view of finding out how this could be done I have had three methods under consideration.

711. I gather from what you say that the 7-inch pipe has been adopted to give increased power? Yes. I might read you an extract from a report which I submitted at the time the scheme was brought before the Engineer-in-Chief. I said in my report:—

There are three ways by which this might be done, viz. : (a) With the storage reservoir as proposed, by increasing the size of the main pipes from 6 to 7 inches, and passing the daily quantity of 300,000 gallons through a suitable water-wheel working continuously at the service reservoir, sufficient electrical energy could, by the use of accumulators, be stored during the twenty-four hours to light the town for five hours nightly; (b) and leaving the proposed storage capacity unaltered, by increasing the size of the main pipe from 6 inches to 12½ inches in diameter, the necessary power could be obtained at the service reservoir by delivering the daily supply of 300,000 gallons in five hours through a water-wheel without the use of accumulators at an estimated cost of £56,255; (c) by doubling the capacity of the storage reservoir and laying 12-inch pipes to a point on the pipe-line 82 chains from the dam, where there would be a head of about 700 feet, the necessary power could be obtained by means of a water-wheel, with the expenditure of 240,000 gallons of water in five hours. As this short 12-inch pipe, in combination with the proposed 6-inch main to the service reservoir, will deliver more than the required daily quantity of 300,000 gallons in nineteen hours, the whole available head could be used for generating electricity for five hours nightly. The current would be brought to the town, a distance of about 11½ miles, by an overhead conductor in the usual manner, no accumulators being required. The estimated cost of this method is £39,717 18s., without including line and extra for generator. Of the three methods described above, the first is recommended as being by far the most economical. As the Council could obtain the requisite power for lighting their town in the manner described at a less expense per annum than by an extension of their present machinery, there does not seem to be any reason why the proposed main pipe should not be increased in size to 7 inches, should the additional expenditure involved be financially feasible, and the following figures go to show that such would be the case."

Some figures follow showing the cost of increasing the main pipe to 7 inches to furnish power for electric lighting to be £2,550. I have had a sketch made showing how it would be possible to work a Pelton wheel automatically so that the water supply would be regulated. I will hand it in. There will be no loss of water whatever. Sufficient power can be supplied without any loss of water by means of this wheel. I might, perhaps, refer to some correspondence with the Mayor, because according to his own showing it will be of greater advantage to the Town of Tamworth to have this power than he appears to think now.

712. I believe the Council offered £150 yearly for the use of the power? Yes.

713. Is that a fair amount? I think it is very much under the mark, as their own letters will show. In a letter written by the Mayor, and dated 28th August, 1895, he shows the probable saving, even supposing they have the 20-horse power, to be £222. He shows in the same letter that if they had 100-horse power their revenue would be increased to £1,460, while their expenditure would be only £810, a difference of £650.

714. And for that £650 they propose to pay £150? Yes.

715. Can you compare the steel and cast-iron pipes in regard to cost? I have made an estimate in the case of both the steel and cast-iron pipes. For 6-inch cast-iron pipes the cost will be £15,004; steel pipes, £8,604; for 7-inch cast-iron pipes, £16,867; and for steel pipes, £11,178.

716. A difference of £5,700 with regard to 7-inch pipes? Yes.

717. What is the difference in the weight? That will be tremendous. The steel pipes would not be more than 20 per cent. of the weight of the cast-iron pipes.

718. Your estimate of the pipes is for pipes laid, including carriage and everything? Yes.

719. With regard to the wrought-iron pipes? They are not made now. Since soft steel came into use wrought-iron pipes have been to a great extent discarded. Steel is considered to be the better material.

720. What do you calculate the life of the pipes to be? It is fair to suppose that a steel pipe, if properly coated, will last as long as a cast-iron pipe. The Water and Sewerage Board at the present time in their accounts allow a life of thirty years for a cast-iron pipe; but all agreed that the life would be considerably more than that, and that it would be fair to take it at fifty years. Of course if there were acid in the water or in the ground it might affect the pipe. If a little of the coating were chipped off the pipe the acid would get at the steel, and that would reduce the length of life considerably.

721. Is this bath you give the pipes an experimental thing, or has it got beyond that stage? I do not think it can be regarded as being in its experimental stage. As the result of some recent experiments, we have decided to put on a mixture composed wholly of Trinidad refined asphalt. Formerly about one-half of tar and one-half of asphalt was used. The reason tar has not proved a success is, I think, owing to the fact that when it is boiled it loses its oil, and is reduced to pitch, which very much reduces the durability of the coating. Everything in connection with the life of these steel pipes depends on the coating put on, and it is of the utmost importance in laying the pipes if a little of the coating be chipped off that more should be put on.

722. Have you had any experience of the new bath? None, except in the experiments to which I have referred. We are so satisfied that it is the proper and indeed the only thing to do to get a good durable coating that we have now specified that it should be put on the Walcha pumping main. The chief objection to the coating previously used was that it became very brittle and chipped off. This new coating is rather soft. We propose to put lime on to solidify it.

723. What has been the nature of the tests you have made? Putting iron into the mixture, raised to a temperature of 300 degrees Fahrenheit. The iron has been subjected to the bath in just the same way as the pipes would be. In the case of the old coating you could peel it off with a knife; in the case of the new it adheres to such an extent that you could not do that. The coating is supposed to penetrate into the pores of the iron to some extent.

724. *Mr Wright.*] Have you made any tests with acids or anything of that kind? No.

725. *Chairman.*] I take it that the coating you have finally adopted is more adhesive than those formerly used? Yes. I produce a sample of a 6-inch steel riveted pipe, which burst at a pressure of 1,568 lb. to the square inch. The maximum working pressure of this pipe would be 392 lb. The 7-inch piping I also produce stood a similar pressure.

726. What pressure will the pipes used in connection with the Tamworth water supply be called upon to stand? The pipes I produce burst at 3,612 feet. The maximum pressure in the case of the Tamworth pipes will be 900 feet.

727. *Mr. Hoskins.*] Do you know whether there has been much work done in the vicinity of Tamworth in connection with the original scheme? Pipes were supplied for the reticulation, and also for the pumping main. J. Davis, Esq.,  
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728. Has anything further been done? Not since the Committee were there I believe.
729. *Mr. Humphery.*] Have you examined Mr. Gipps gravitation scheme from Swamp Oak Creek? I know of it, but I should prefer not to give evidence in regard to it, because I have not looked into it.
730. You are not able to make any comparison between the two schemes? Only from information obtained in the office.
731. With regard to the details of the scheme before the Committee have you worked them out carefully so as to be able to fix the cost definitely? Yes.
732. The sum of £35,000 will cover the whole cost? It will.
733. It will cover the inclusion of 7-in. instead of 6-in. pipes? Yes. It is intended to use 7-in. pipes from the storage reservoir to the service reservoir. The water supply itself did not require more than 6-in. pipes, but when the Council asked for 100 horse-power, the question arose as to what pipe was necessary in order to give it to them, and a 7-in. pipe was decided upon.
734. Do you confirm Mr. Price's evidence as to the quantity of water necessary to pass through the pipe to supply the present population and also the electrical power? I do not quite agree with him on that point.
735. In what respect do you differ from him? I do not think it is necessary to pass 300,000 gallons through the pipe to secure 100 horse-power. The quantity could be automatically regulated so as to give the exact supply necessary, and at the same time the desired horse-power. The minimum quantity of water that will be required is about 170,000 gallons. If that quantity is discharged into the service reservoir it will give a theoretical horse-power of 115 or an efficiency of 92. If 216,000 gallons are discharged it will give an efficiency of 107. If 300,000 gallons are passed through it will give an efficiency of 126 horse-power.
736. The supply of electrical power as well as the water supply itself will be obtained without any waste whatever? Yes.
737. Have you examined the catchment area? A good portion of it. I have not been over the whole of it. I have not been over the upper portion of it. There has been no survey made of the catchment. It was considered to be so ample that the information supplied by the district surveyor was thought sufficient.
738. Were you employed in connection with the Coonamble water supply works? I completed the works. The water in that case is obtained from a bore, and the bore is in the town itself. The water flows into an elevated tank and gravitates from it into reticulation pipes.
739. Is electrical power obtained? They are speaking of it; but nothing has been done in the matter yet.
740. Will this be the first water supply combining electrical power? Yes.
741. *Mr. Trickett.*] I see that a sum of £200 a year is estimated to be the annual expense in connection with this scheme;—do you think that is sufficient? I consider it is quite sufficient, even supposing that the council's men do nothing towards maintenance, and supposing they have to employ a clerk in the office.
742. Comparing the scheme with any existing scheme do you think that is a sufficient amount to allow? Yes. At Orange they employ simply one man. There have been the office expenses in addition.
743. Has there been any completed scheme in connection with which there has been a large dam, and where the dam has shown any tendency to break away? The Junee scheme is finished, but the dam has not had a great quantity of water in it up to now. However, there is not the slightest danger. The dam itself is so constructed as to be stable.
744. The dam is so constructed as to render it improbable that there will be any washing or breaking away? Yes.
745. Has not the length of piping in the proposed scheme been very much reduced as compared with the previous scheme in the matter of reticulation? By about 3 miles.
746. In the course of our enquiry into the last scheme we discovered that there were a great many pipes in connection with vacant blocks of land; I suppose they have all been cut out? They have all been cut out. There has been very little increase to the town, and therefore little necessity of increased reticulation on that account since the last proposal was before the committee.
747. Have you made any provision for the possible growth of the town? We have allowed an amount of £1000.
748. The pipes will be laid down I suppose in those portions of the town which are most likely to be quickly built over? The pipes will only be laid down as population increases, under circumstances which will permit of their paying interest on the expenditure.
749. There will be no latent expenditure as it were? No.
750. I suppose the council objected to the unnecessary laying of reticulation pipes? I do not know that they formally objected, but it is usual in all such cases to consult the council, and to put in the reticulation provided they ask what is reasonable in the places where they require it.
751. You have not personally examined the catchment area? I have been over portions of it several times.
752. What do you think of the holding character of the soil? It is granite country excellently situated for a gathering ground for a water supply.
753. There will not be much absorption? No, not a very great deal. At the same time the catchment is so large that absorption has not to be taken into consideration.
754. Is the catchment area so situated that it is not likely to be subject to pollution to any great extent? I do not think there will be any pollution to affect the quality of the water.
755. Settlement is not likely to go on to such an extent as to constitute a source of pollution? It is almost all sheep country. There is a little cultivation here and there, but none of any consequence.
756. Were you consulted as to the abandoning of the pumping scheme? When I first took charge of the water supply Mr. Price said to me privately that he considered there was some prospect of obtaining a gravitation scheme. We consulted with Mr. Hickson about the matter and he finally instructed us to go to Tamworth to see what could be found. Mr. Price showed me what was in his mind at Moore Creek and we reported that we thought there was every possibility of a good gravitation scheme being found.

- J. Davis, Esq.,  
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757. Did the possible impurity of the water induce you to change from a pumping to a gravitation scheme? I was not sure about the quantity of water; the quality I felt would be all right.
758. As far as you know that was not one of the considerations which influenced the Department in making the change? That point was not considered. It was regarded as having been absolutely settled by analysis.
759. *Mr. Davies.*] Will any portion of your pipe service be exposed? No, it will be buried. It will be 18 inches below the surface of the ground.
760. So that the heat of the sun will not affect the asphaltum on the pipes? No.
761. I believe it is proposed to make a change from riveted to welded pipes? Yes.
762. Have you had any tests made of the welded pipes. Pipes are now on their way out with which it is proposed to make exhaustive tests before finally adopting them.
763. Have you in any of these schemes used welded pipes? No.
764. So that you had no experience as regards the superiority of welded over riveted pipes? No; it is a question whether the welded pipes are as strong as the riveted pipes. When they are procured alternative tenders will be invited for the supply of these pipes, and the cheapest will be taken. We shall specify the tests which will have to be applied before we take delivery.
765. Why is the departure from riveted pipes proposed? We thought the welded pipes would be cheaper.
766. Have you had any prices quoted to you showing that there would be a reduction in the cost? The riveted pipes are quoted at £25 per ton, and the welded pipes at £22 12s. per ton. There would be a difference of £2 8s. upon the 7-inch pipes.
767. You propose to subject the welded pipes to the same test as the riveted pipes before they are used? Yes.
768. Do you invite tenders in the Colony as well as in London? We do not invite tenders in London. We invite tenders in the Colony. Importers can put in tenders if they wish to.
769. Have you based your estimates on the lowest charges for welded pipes? Yes.
770. So that if you have to revert to riveted pipes, your estimate will be exceeded by a considerable sum? If we have to pay £25 a ton for the pipes, the cost will be slightly above our estimate.
771. About how much? I cannot give this just now. Welded pipes are not sold by the ton, but by the lineal foot.
772. The extent of the catchment area is about 22 square miles, I believe? Yes.
773. Do you know what the rainfall there has been during the last eleven years? I have a return showing an average of 28 inches for the last thirteen years.
774. What was the smallest fall during that period? In 1888 there was 18.67 inches.
775. What rainfall will be necessary to fill your storage reservoir over an area of 22 miles? If one-tenth of an inch actually reached the dam it would be sufficient to fill it.
776. It would take a fall of about 1½ to 2 inches to fill the dam? Yes; if the ground were dry and the rain steady.
777. Do you, as a professional man, regard the wall in front of the catchment dam as sufficiently durable to stand the pressure in the event of the dam being full? It must be so. The pressure behind the wall is less than the weight of the wall.
778. Would not the wind add to the pressure? It might create a little wash, but it would not affect the pressure.
779. The Department has made provision for all emergencies of that kind;—for instance, there is not likely to be a greasy wheel to the dam? We shall take care in building the dam to get to the bed-rock.
780. *Mr. Lee.*] Have you had anything to do with the financial aspect of this matter? When I submitted this scheme I prepared an estimate of the revenue, but it has since been set aside by a more reliable return prepared by an officer of the Department.
781. Is that the return put before us by Mr. Barling? Yes.
782. The rate proposed to be struck within the reticulated area is the estimate of the Department, not of the Tamworth Council? Yes. But the material for making out the estimate has been obtained from the Council's books.
783. Had you anything to do with the preparation of the financial estimates in connection with the previous scheme? No.
784. You will see that there is a great discrepancy between the revenue, estimated in 1892 and 1895? I take it that in connection with the former scheme there was simply an estimate. The figures now put before the Committee are facts.
785. According to the evidence given by Mr. Barling on the 12th October, 1892, there was an estimated revenue of £1,632 from the water supply scheme—the estimated revenue now is £2,320;—how does that great difference arise? I expect the circumstances of Tamworth have greatly changed since the former information was supplied. The ratable value of property has probably changed materially. At the same time the town has increased in size within given areas.
786. Considering that the former estimate was made such a short time ago and that in the meantime so few properties have changed hands—considering also that property has fallen in value to the extent of 50 per cent. how do you account for the estimated revenue being so largely increased? I can give no explanation beyond that I have already given.
787. This is a Departmental estimate, it is not the Council's estimate? It is a Departmental estimate, but it is based on material supplied by the Council and obtained from their books.
788. At what distance are you calculating the reticulated area from the reticulating pipe? One hundred and fifty feet.
789. Will your proposal embrace the whole of the settled portions of Tamworth and West Tamworth? Yes. There may be a few isolated houses to which it would not pay to lay pipes at the present time, but there are very few of them.
790. Is it not proposed to strike a general rate of 1s. in the pound upon the whole of the municipality? We have no power under the Act to rate the whole of the municipality. We have no power to rate any property which is not within 150 feet of the reticulating pipe.
791. You said just now that the whole of the pipe would be covered; how do you propose to cross the river from Tamworth and to West Tamworth? We cross the bridge. I had forgotten that there the piping would be exposed. Composition about ¾-inch thick to protect the piping from the sun will be probably put on. It has been done at Armidale, and it has answered very well. 792.

792. Did you not furnish an estimate for a 6-inch service? Yes.
793. What caused you to alter your opinion, and recommend a 7-inch service? It was in consequence of a request from the Council for 100-horse power for electrical purposes.
794. How long after you had made your estimate for a 6-inch pipe did you arrive at the conclusion that a 7-inch pipe would be desirable? The estimates were made simultaneously. The 6-inch piping was for the water supply pure and simple. It was a question whether the Department should give the extra-sized pipe, and in that way provide the horse power the Council asked for.
795. If the thing was practically decided in the first instance, why was not an estimate made at that time for 7-inch pipes? Mr. Barling read only a portion of my report. He discontinued reading just as he reached the portion referring to the estimate for the 7-inch pipe.
796. If he had quoted your report in full it would have saved any misapprehension on the point? Yes.
797. *Mr. Fegan.*] You say that the Departmental estimate of revenue is based upon the Council's books? Yes.
798. Really the estimate depends upon the Council's own estimate of their own property? You may put it in that way.
799. You altered your decision as far as the pipes were concerned, believing that you would get a better return from a service which would afford a water supply, and at the same time provide electric power? Yes; I regard that as most desirable.
800. You think there would be a better prospect of the Government getting its money returned? It would be better both for the Government and for the Council. It would be economical all round.
801. The alteration was made at the wish of the Council? Yes.
802. *Mr. Wright.*] Can you give me any information as to the cost of the scheme suggested by Mr. Gipps? I have looked into the scheme, and it seems to me that it could not be carried out with 17 miles of steel pipes for less than £45,000.
803. What is Mr. Gipps' estimate? £17,500 with an open drain.
804. Has any Departmental estimate been made upon the same lines? An estimate made when the Tamworth Water Supply was previously before the Committee amounted to £24,000. That was made by Mr. Darley upon Mr. Gipps' plans.
805. What is the height of the service reservoir in connection with Mr. Gipps' scheme? It is 118 ft. above the railway station.
806. Would Mr. Gipps' scheme supply all parts of the town by gravitation? No. The service reservoir would be about 60 ft. below the highest ground which has to be served.
807. Is that information gathered from Mr. Gipps' own plans? No survey was made by the Department.
808. I presume the cost of the pipes includes the cost of delivery? Yes.
809. What charge do the Railway Commissioners make on pipes to Tamworth. £3 15s. per ton.
810. Do you not think that if proper representations were made to them they might make a reduction on that charge? They might.
811. It appears that a very large factor in the costs of the work consists of the railway charges on the pipes? Yes.
812. What is the superficial area of your main reservoir? Eleven acres.
813. What is the mean depth? Sixteen feet.
814. Have you gone into the question of evaporation? Yes.
815. What would be the evaporation in the months of December, January, and February? It would be difficult to say. Taking the twelve months I have estimated it at 40 inches. That is a liberal allowance for evaporation in a place like Tamworth. On this basis it would be eight and a half million gallons in the year.
816. It would mean a loss of 25 per cent. by evaporation? Yes.
817. In the event of two or three successive years short of rain, what would become of your permanent supply? We estimate that we should have enough stored there for 250 days' supply without any water whatever running in, except sufficient to compensate for evaporation.
818. Has any inquiry been made as to the permanency of the water in Moore Creek? Yes; it is quite an exceptional thing for it to be dry. During the time the survey was being made its discharge was never less than 20,000 gallons in twenty-four hours.
819. You have exhausted every means of information to satisfy yourself of the permanency of this supply? Yes; the season this year is exceptionally dry, and the flow has not been less than that given.

J. Davis, Esq.,  
M.I.C.E.  
7 Jan., 1896.

WEDNESDAY, 8 JANUARY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.  
The Hon. JOHN DAVIES, C.M.G.  
The Hon. JAMES HOSKINS.  
The Hon. WILLIAM JOSEPH TRICKETT.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
ANGUS CAMERON, Esq.  
THOMAS HENRY HASSALL, Esq.  
FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Water Supply for the Town of Tamworth.

Frederick Bowdler Gipps, Esq., civil engineer, sworn, and examined:—

820. *Chairman.*] You are a civil engineer? Yes.

821. I believe you desire to make a statement to the Committee? Yes; I should like, with the indulgence of the Committee, to read a statement in regard to certain proposed modifications in my original scheme for the Tamworth Water Supply:—

F. B. Gipps,  
Esq.  
8 Jan., 1896.

My original scheme provided—1st. For a storage of 100,736,000 gallons, in an area of 38.6 acres, with a dam 26 feet high, at a certain point in Cockburn River, just below 198 miles mark on the Great North railway line; 2nd. For the delivery, by open conduit, of 4,000,000 gallons a day into a service reservoir 4½ miles from Tamworth; 3rd. For the storage of 2,400,000 gallons in the service reservoir; 4th. For a supply main of 12-inch and 11-inch pipes to the reticulation pipes; 5th. For the provision of 25-horse power for electric lighting and a large supply for irrigation. The mean level of the service reservoir was 118 feet above the railway station and 15 feet below the highest point in the town measured by me.

When

F. B. Gipps,  
Esq.  
8 Jan., 1896.

When I gave my evidence on this scheme before the Public Works Committee in December, 1892, I had only landed from England the day before; I knew nothing of the evidence that had been given before it; nor was I even prepared with notes and data which might have assisted the Committee in judging on its true merits.

The modification of my scheme embraces:—1. The raising of the dam 6 feet to a maximum height of 32 feet; 2. The substitution of a 16-inch steel pipe for the open conduit objected to by the Borough Council, which will deliver 942,000 gallons to the service reservoir; 3. A service reservoir of 500,000 gallons capacity 9½ miles from the storage reservoir, and 4½ miles from Tamworth; 4. A delivery-main of 9-inch diameter steel pipes from the service reservoir to the reticulation pipes; 5. The application of an accumulated 90-horse power in Tamworth for electric lighting; 6. The application of a minimum supply of 400,000 gallons per diem for irrigation. The cost of this modified scheme is £34,220, or £35,000 if connected with the Moonbi Springs.

The effectiveness of the scheme.

I would now draw your attention to a few points in connection with the effectiveness, durability, and economy of this modified scheme to provide for the present and future requirements of the town.

I would first consider the effectiveness of the scheme under five heads:—1. In regard to the area and character of its watershed, ensuring an ample supply of pure water to the storage reservoir; 2. In regard to the capacity of the storage reservoir to provide the required supply of water to the town in the emergency of the most severe drought; 3. In regard to the capacity of the pipe-line to deliver the required supply at a sufficient elevation to command the highest point of the town; 4. In regard to the provision of a service reservoir of sufficient capacity to ensure such supply from any danger of interruption; 5. In regard to the capability of the scheme for expansion to meet the growing wants of an increasing population.

Watershed.

The character of the watershed cannot well be excelled. It rises in the rugged peaks and spurs of the main dividing range of mountains, and preserves its broken features throughout to the site of the storage reservoir dam. The prevailing country rock is granite, ensuring clear and pure water. Its area is close on 313 square miles, or 200,000 acres. According to the report of the Government Meteorologist, Mr. Russell, the driest year (1885) recorded for Tamworth in seventeen years' observation had a rainfall of 13·67 inches. Judging from actual observations taken for eight consecutive months on the Cordeanx River, the proportion actually available for supply would be 4 per cent., which would represent 3,885,500,000 gallons in the whole year. This is equivalent to a supply of 10,000,000 gallons daily. There can, therefore, be no doubt that the capacity of the watershed is sufficient to meet the emergency of the longest drought, provided that its discharge can be stored, as the bed of the Cockburn River has been known to be dry for two or three consecutive months at a time.

Storage reservoir.

I propose to add 6 feet to the storage reservoir. This would give a dam 32 feet high, commanding an area of over 40 acres, and would throw the river back for over 7,530 feet, and impound over 163,000,000 gallons of water. It follows, therefore, that most of the watershed supply would run to waste. Mr. Hawksley, the eminent English hydraulic engineer, has laid down a law for storage reserve which is now generally adopted. This law establishes that the storage reserve of water should vary inversely, as the square root of the rainfall of the mean of three consecutive dry years divided into the constant number of 1,000, the result being the number of days for which storage will be required. The three driest consecutive years recorded so far at Tamworth were 1880, 1881, 1882, and their mean rainfall is 19·69 inches. This, treated by Hawksley formula, would give 225 days as the period for which the storage reservoir might be required to provide the supply. Therefore a supply of 300,000 gallons a day would require a storage capacity of 67,500,000 gallons in the reservoir. As my proposed storage reservoir would impound 165,000,000 gallons, it would provide for double the storage required.

Capacity of pipe-line.

The Borough Council having objected to the open conduit in my original proposal, I have modified my scheme by substituting 16-inch diameter steel pipes. The surface level of my storage reservoir would be 177 feet above the railway station, and 44 feet above the junction of Brisbane and Raglan streets, the highest part of Tamworth measured by me. From this level the 16-inch pipe would deliver 942,000 gallons per diem into a service reservoir on a spur close to the site of my old service reservoir, 4½ miles from Tamworth, having a surface level of 200 feet above Peel-street, and 153 feet above the railway station, and 21 feet above the junction of the above streets. As the pipe-line would deliver the required supply of 300,000 gallons in eight hours, I propose to apply the surplus of 642,000 gallons for sixteen hours to motive power and irrigation, as proposed in my original scheme. With an effective head of 200 feet from the storage reservoir, 642,000 gallons would give 40-horse power, allowing of an accumulated horse power for electric lighting in Tamworth.

Service reservoir.

The service reservoir would impound 500,000 gallons, and being of the same dimensions as that proposed by the Works Department needs no further comment.

Supply main to Tamworth.

The supply main to Tamworth would consist of 4½ miles of 9-inch steel pipes, half a mile of which I am led to believe is available from the intended pumping main pipe included in the reticulation pipes, owing to the abandonment of the Works Department pumping scheme.

Effectiveness of scheme proved.

Thus I have demonstrated the effectiveness of my proposed works, not only to provide for present requirements, but also for very valuable collateral advantages in its provision for horse power and irrigation, whilst I have shown its capability to meet the growing wants of the town, which, owing to its situation as commanding a large and excellent area of agricultural land, must be considerable in the near future.

Durability of the scheme.

The next point to be considered is the durability of the scheme. Exception has been taken to my proposed dam of combined rock and timber, because of its assumed temporary character; but considering that works of similar character and of much larger dimensions have been constructed in the United States for over a century without the record of any significant failure, this objection seems groundless. Though masonry dams may seem positively to ensure permanence and stability, yet their failure during this century in Spain, California, and quite recently in France, has proved that they are not entitled to such absolute confidence. The Bousey masonry dam in France was constructed with great care, its foundations were taken down 30 feet to what was considered a solid base, and yet without any other apparent reason except the failure of the cement joints, it burst on the 27th April last year, releasing a huge wave of water, which devastated one of the fertile valleys of the Vosges, carrying away towns and villages in its seething torrents, and drowning many of the inhabitants. As a notable instance of timber and rock structures, the Holyoke dam stands prominent. It was constructed in 1849 across the Connecticut River, at South Hadley Falls, 8 miles north of Springfield, Massachusetts. Its length is 1,017 feet and its height 32 feet. It was built on rock bottom. The volume of the water passing over its crest may be best imagined from the fact that the roar of the fall has been heard for 40 miles. It supplies power to a large number of cotton, paper, and flour mills, to ironworks and different factories which employ thousands. Now, considering that Springfield is an important town of over 40,000 people, it is hardly probable that a work of so great importance to its industries, and at the same time menacing the lives of so many people, would be allowed to be constructed except on the most solid and secure conditions. Again, the dams on the north fork of the American River and at the head of the Poudre Canal, in California, both 30 feet high, and the Arizona Canal weir, are constructed on this principle, and are all of too great importance to be considered as only temporary structures. In Victoria, again, it appears by the report of 1891 that out of fifty-four weirs and dams inspected forty-eight were of timber and only six of masonry. The Doon dam, except in its foundations, resembles the proposed dam at Cockburn, its dimensions being nearly similar. Its length at top is 199 ft. 4 in., and its height 26 feet. Its cost was £1,707. My proposed dam, therefore, as it has been calculated to resist many times the pressure it will ever be taxed with, may be relied on both as to strength and durability.

The pipe-line.

The pipe-line would traverse the right bank of the Cockburn River for the first 2 miles, when it would strike the Great North Railway line, which it would follow for the remaining 7½ miles almost to the site of the service reservoir situated on a bold spur on the right of the line. For the first 5 miles the pressure on it would be insignificant, never exceeding a head of 60 feet of water. In the next 4½ miles to the service reservoir it would not exceed 102 feet, and would be only that for a short distance at Tintuhall Station. The thickness of the proposed pipe-line is ·083 inch, or 14 B.G., which will allow of a factor of 16 for safety. The pipe-main which supplies Virginia City, Nevada, with water is 11½ inches in diameter and is of wrought iron. Its thickness for a head of 200 feet and less is only No. 16 B.G., and for a head varying from 330 to 340 feet, 14 B.G. The strength and durability of the main works proposed by me, can, therefore be relied on

Estimate Works

	£	s.	d.
Storage reservoir .....	2,500	0	0
9½ miles of 16-inch steel pipe, 14 B.G.....	9,500	0	0
Service reservoir .....	1,800	0	0
4 miles of 9-inch steel pipe, 14 B.G.....	3,600	0	0
Reticulation .....	14,260	0	0
Survey and contingencies .....	2,500	0	0

£34,220 0 0

The

The cost of the storage reservoir dam has been carefully calculated by me, and as it would require little more material than the Doon dam which cost £1,707, and has a much better foundation, and as also there is an abundance of available timber in the neighbourhood, whilst the rock-filling is immediately at hand, it is not likely to be exceeded.

The pipe-line has been estimated at £22 per ton for pipes, and £4 per ton for railway freight, and as the pipes can be taken to their position for most of the distance by the railway trucks, and the laying on their prepared bed will be inexpensive, they will probably cost less than £1,000 per mile. In California where steel is £6 or £7 per ton dearer than in England 6 miles 3,620 feet of a main pressure pipe-line has quite recently been laid from Raynor Springs to Riverside for irrigation and domestic purposes. It cost \$31,500, or £6,300, being somewhat less than £1,000 per mile. The contract and specification provided for the best quality of double-riveted steel-pipe No. 14 B.W.G., weighing 3.35 lb. per square foot, and thorough workmanship. The pipe-line consists of 9,000 feet of 16-inch diameter, and 26,300 feet of 14-inch diameter pipes having a carrying capacity of 4.3 cubic feet per second, or 2,322,000 gallons in twenty-four hours. From this it will be observed that though the pipes had to resist greater pressure than the pipes proposed by me, and whilst also iron was dearer, yet they were laid for less than £1,000 a mile.

The Works Department have already, it appears, committed the Borough to an expenditure of £14,260 for reticulation, so that I am in no wise responsible for this heavy charge.

The revenue from my proposed scheme would be twofold. Independent of the Borough water rates, it would realise a certain revenue from the available 40-horse power (which would assist electric lighting) and from the supply then available for irrigation. At the low price of £4 per annum per horse power, 30 horse-power would realise a sum of £120 per annum, whilst the sale of 400,000 gallons at one penny per 1,000 gallons (instead of one shilling per 1,000 gallons, the Sydney charge) would realise £60 per annum, giving a combined revenue of £728, independent of rates, which it would assist to largely reduce.

The storage capacity of the reservoir at Cockburn River could be more than doubled by raising the dam another 10 feet, so that when the growing wants of the town require it, the water supply embraced in this scheme could be doubled at the cost of £12,000. In the event, however, of a pottery being established at Tamworth, the estimate for the pipe-line could be largely reduced by the substitution of stoneware pipes for steel pipes. By removing the pipe-line a short distance from the railway line, there would be no appreciable pressure on it for this distance. This would reduce the estimate of pipes by £3,500, leaving a total of £8,500 for the duplication of the scheme, whilst assisting also in establishing an important industry. Stoneware pipes of even larger diameter are used on water supply works of different English towns, whilst they are practically permanent and indestructible, having, according to description, been unearthed from the ruins of Pompeii after eighteen centuries of constant use whilst buried in the ground. Finally, the water passing over the dam, which, in ordinary seasons, would average fully 3,000,000 gallons a day, would offer Tamworth an immense advantage for the establishment of all kinds of industries by the adoption of the available water power, by running an open ditch to my first reservoir site. Lastly, the Moonbi Springs, so strongly advocated by Mr. Riely for the water supply of Tamworth, would undoubtedly be a very valuable auxiliary to the supply of my scheme, at the cost of only half a mile of piping.

822. *Mr. Hoskins.*] You were employed by the Municipality of Tamworth to make a survey, and to prepare plans for the supply of Tamworth with water? Yes.

823. What has brought about the modifications in the scheme which you have laid before the Committee this afternoon? The scheme has been modified because the Borough Council did not seem inclined to carry out the open conduit line. The scheme I now put forward does away with the open conduit line and slightly increases the height of the service reservoir.

824. Is not your scheme very different putting aside the question of the open conduit line? No. The supply is from the same spot—the storage reservoir is the same. I have only added 6 feet to the height of the dam. You will see that I have not gone further afield for the storage reservoir. I do not alter the site of that, nor do I actually alter the position of the conduit very much.

825. Then how comes it that you estimate the cost of your second scheme to be £34,220, whereas your estimate for the original scheme was £17,650? In the first instance I provided for an open conduit and that could be cut at a price very much cheaper than that at which a line of pipes could be laid. I estimated 13½ miles of conduit costing £5,600, a storage dam at £1,750, and my reticulation cost only £5,000.

826. Did your original scheme propose that all water should be conducted to the storage reservoir by open conduit? Yes; although the idea of a conduit has been rather ridiculed. I believe one of the engineers examined called it a ditch. I might mention that open conduits are to be found not larger but smaller than that which I propose at many places in France; for instance, at Lyons, Metz, Versailles, Montpellier. The conduits in those places are very much smaller than that which I propose. I could have carried out a much more effective scheme at a much less cost with an open conduit. I see no valid objection to my proposal, but it having been objected to by the Borough Council I am compelled to adopt a pipe line.

827. The Borough Council objected to your original scheme mainly on account of the open conduit? Yes.

828. Will the substitution of a pipe line for an open conduit account for the difference between your two estimates of £17,650 and £34,220? Certainly not. But I allowed only £5,000 for reticulation, whereas the Government put down £14,000.

829. Have you allowed only £5,000 for reticulation under your amended scheme? No; I put down the same amount as that in the Government scheme. That is what makes the difference in the estimates.

830. In your amended scheme you have adopted the view of the Government in regard to the extent and the expense of reticulation? I am obliged to. The reticulation, as far as I can learn, is either done or is ready to be carried out.

831. Your original scheme, including only £5,000 for reticulation, would have been insufficient, judging by your amended scheme? Not in my idea. As a rule we look for a revenue from reticulation. We never think of supplying reticulation to streets in which there are only one or two houses. I proposed to supply reticulation pipes to certain streets and for a certain mileage, with which I understood the Borough Council were satisfied at that time. It would seem that they afterwards altered their opinion.

832. Then the increase in your estimate for reticulation is brought about by the dissatisfaction of the Municipal Council of Tamworth with the amount originally allowed by you? I do not think it can be said to be due to their dissatisfaction. They might have considered that the reticulation I proposed was sufficient at the time I was there, and they may afterwards have altered their mind. They made no comment upon my report when I handed it in, leaving me to suppose that they were not at all dissatisfied; on the contrary, they congratulated me upon it.

833. What is the reason you have brought forward this amended scheme? Mine was a gravitation scheme in the first place, and that of the Government a pumping scheme. The Government then brought forward a gravitation scheme as the only one available at a moderate price. I want to show that my gravitation scheme can be carried out, and that it is more effectual in every way than that of the Government, comparing the watersheds, the storage reservoirs, the delivery of water, and the supply for irrigation. In every respect my scheme is worth more than double the scheme of the Government.

F. B. Gipps,  
Esq.

8 Jan., 1896.

Storage  
Pipe-line

Reticulation.

Revenue.

Capability of  
expansion.

- F. B. Gipps, Esq.  
8 Jan., 1896.
834. You were not asked by the Municipal Council to prepare an amended scheme? No.
835. Have you ever designed or had charge of a water supply scheme for a town of any size in the colony? Not in the case of a town, but I have carried out some of the largest hydraulic schemes in the colony. Not only that, but I have been the adviser in regard to irrigation schemes for some of the biggest financiers in London. I carried out works on the Turon River and for different companies at Kiandra, and I was also the consulting engineer in the case of the Goulburn and Wagga works.
836. Were not the Goulburn works carried out by the Government? Yes; but I was consulted by the Municipality in regard to certain points in them.
837. Did the Municipality make any deviations from the recommendations of the Government officers? They objected to take over the service reservoir on account of the condition of the banks.
838. But they did take it over? After it had been refilled.
839. Seeing that you have been consulted by municipal councils with regard to the stability of their schemes, did it not occur to you that it might be advisable for you to submit your scheme to the Government with a view to their adopting it? I had a lesson in that matter when I submitted my Kenny Hill high-level scheme to the Government. All the return I got was a couple of lawsuits; I am tired of that sort of thing.
840. Do you submit this amended proposal to us with the view to induce us to report in its favour, or with a view of inducing the Government to adopt a portion of it? With a view to induce the Government to adopt it. I think it is superior to that submitted by the Works Department. I take it that this Committee is appointed to investigate proposals of this kind upon their merits; and if any member of the public is able to give the Committee information upon any scheme which is brought before it, it is his duty to do so.
841. Did you not propose in your original scheme a catchment area of 200,000 acres? Yes.
842. Have you had any survey made showing this area? It was given to me by Mr. Poate the District Surveyor.
843. Your original scheme provided for a dam 32 feet high? Twenty-six feet.
844. Would that be a secure dam? Yes: it is on a splendid rock foundation.
845. Would not the granitic formation be full of fissures? It is not on granite; it is a siliceous schist.
846. Would there not be fissures in the formation to collect a quantity of water? I do not think there would be any fissures in it.
847. What would be the area of the dam? Forty acres.
848. Have you made allowance for absorption? In the case of every reservoir a certain allowance is made for evaporation and absorption.
849. Is it not a fact that in the case of the best water supply schemes the bed of rock at the point where the water is arrested is cemented to prevent absorption? The Holy Oak Dam is one of the most important in the world for water power, and that is not cemented. It is tied right on to the rock bottom.
850. I believe you expect to collect 163,000,000 gallons of water in the storage reservoir? Yes.
851. Do you know very much of this locality? I surveyed the whole line, and I was there for some time.
852. Do you think that you will be able to collect at the spot to which you refer 163,000,000 gallons? Yes. I think there is very little doubt about my being able to keep it up to that storage.
853. With an average rainfall of 13 inches a year you think you will be able to collect 163,000,000 gallons? I think so, judging from the actual experience there. The oldest residents informed me that they had only known the river to be dry once for two consecutive months, and that was in 1868. A storm then followed which brought the river up a banker. I have provided for over a year's supply at 300,000 gallons a day.
854. Have you read the evidence given before the Committee by the officers of the Works Department in regard to the scheme they now propose? Yes.
855. You propose to conserve a quantity of water very largely in excess of that which is to be conserved by the Government scheme? Yes.
856. And you have no hesitation in saying that all your estimates can be relied upon in the event of the scheme being carried out? I am confident that my estimates will be realised. I have the Moonbie Springs to assist me besides the water-shed I have mentioned. Considering the water-shed is very little short of the water-shed which supplies Sydney, and which is expected to give a supply of 120,000,000 gallons a day, I do not think there is very much doubt about my getting a 1,000,000 gallons a day.
857. The pipes you propose to use are very much larger than the pipes proposed to be used by the Department? Yes.
858. I suppose the pipes you use would be sufficiently large to supply Tamworth for very many years to come? Of course if the water can be supplied for industrial purposes, and can be made to return a revenue so much the better.
859. *Mr. Cameron.*] Still the pipes you propose to use are largely in excess of existing requirements? Yes; but I have provided for the expansion of the town.
860. *Mr. Hoskins.*] I suppose you know that the evidence of the officers of the Works Department is to the effect that your estimate of the cost of your original scheme will not suffice to carry it out? I am hardly surprised to hear that. Their estimate for pipes was over £30,000. Their pipe-line was a cast-iron pipe-line, and they were asked what would be the difference between cast-iron and wrought-iron. The reply was that it would make very little difference. Mr. Price was asked a similar question, and he replied that cast-iron pipes would cost £18,000 instead of £1,800. If my scheme had been estimated in that way that would be sufficient of itself to account for the difference in price.
861. What kind of pipes do you propose to use? Steel. I suppose I have the largest experience of any engineer in the Colony in wrought-iron pipes. I was the first to introduce them here.
862. And you are prepared to abide by your estimate of £34,000 as being sufficient to carry out the work? Yes; I myself would contract to carry out the work at that price.
863. *Mr. Humphery.*] Are your 16-inch steel pipes of the same thickness as those proposed in the scheme of the Government? The pipes proposed to be used by the Department are  $\frac{3}{4}$ -inch in thickness. They give a bursting strain of 1,568 lb., giving a tensile strength of 10,976 lb. per square inch, or 911 lbs. per sectional inch in my pipes. My pipes would be about  $\frac{1}{2}$  of an inch thick; 55 lb. would be the highest strain, allowing a factor of 16 for safety.
864. What do you estimate the cost per mile of 16-inch pipes? £1,000.
865. What would be the cost of the 7-inch pipes? I should have to make a rather long calculation to discover that. I am not prepared to answer that question at present.

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866. Are you familiar with the Departmental scheme? Yes; according to the evidence I have read.
867. Have you visited the locality from which it is proposed to bring the supply? I have not been to the storage reservoir, but I have visited Moore Creek.
868. How far up the creek have you been? I cannot say; I rode up.
869. Can you say how far from the fall? I never saw the fall.
870. And you would not be prepared to pronounce an opinion upon the relative merits of your scheme and the Departmental scheme without visiting the locality from which the Department propose to bring the water? I could only pronounce an opinion from comparing the different points. In the first instance Mr. Hickson proposes to give a supply of 540,000 gallons from his storage reservoir, and as his storage reservoir will not provide anything like sufficient for 225 days at the rate of 300,000 gallons per diem it certainly could not provide for the larger quantity he proposes to draw.
871. In your first service reservoir I think you proposed to make provision for two and a half million gallons. Why do you in your present scheme suggest a reduction from two and a half millions to half a million? I was then delivering 4,000,000 gallons a day, and of course I wanted a much larger storage to provide for emergencies than I do now when I am delivering less than 1,000,000 gallons a day.
872. Would you not have had sufficient storage for water in the impounding dam? It might have been sufficient, but you generally store from two to three days supply in the service reservoir.
873. Have you made any estimate of the probable cost of carrying out the Departmental scheme? I have not. In my idea the weak point in the Departmental scheme is that the provision for storage is nothing like sufficient. 35,000,000 for a supply of 542,000 gallons a day is nothing like sufficient. It is positively necessary in the opinion of the best authorities in England to provide for a period of 225 days.
874. *Chairman.*] Your main objection to the Government scheme consists in the inadequacy of the storage? That is one of my objections.
875. The catchment area you think is sufficient? Yes. If the storage reservoir were enlarged, it would be sufficient for a supply of 300,000 gallons a day, but it would not provide for the expansion of the town. If you take 300,000 gallons a day for 225 days, you would require 67,500,000 gallons. You will see therefore, that the storage reservoir would be empty twice over.
876. That 300,000 gallons a day is on the basis of the population being double what it is at the present time? Yes.
877. The present requirements being less than 200,000 gallons a day? Yes. But 300,000 gallons a day is what we should call the duty of the scheme. If you supply 170,000 gallons for power, it means that as the population grows the value of your scheme would decrease. You will have either to give up that horse-power or to bring in fresh pipes to keep up the supply of the town.
878. Upon the basis of an ample storage at the head of the supply is the Government scheme inferior to that which you propose? It is inferior in every way. I take in the first instance the watershed, which is fifteen times less in area. Take the storage reservoir—that is less than one-fifth in storage capacity. Take the pipe-line, that gives very little over one-half of the pipe delivery, and for irrigation purposes again the Government scheme provides nothing at all. Upon all these points the scheme is distinctly inferior to that proposed by me.
879. *Mr. Humphery.*] Why are your figures similar in their totals to those contained in the Departmental estimates, your pipe-line being of 16-inch pipe and of greater length than that in the Government scheme? The great point of difference is to be found in the thickness.
880. What would be the proportionate difference arising from the difference in thickness? I should have to go into figures to give you that.
881. Would it be 10 per cent., 20 per cent., or 50 per cent.? I could not say without going into figures.
882. Do you contend that the pipes proposed to be used by the Department are unnecessarily strong? Undoubtedly no; but the pipes will cost much more to lay, and they will have to be taken further away from the railway line. In the case of my pipe-line the cars can deliver the pipes along the line.
883. *Mr. Hoskins.*] But the Government officials have a greater pressure of water? 700 feet as against 60 feet.
884. *Mr. Humphery.*] I think you admitted when you were last before the Committee that a pipe scheme would be superior to an open conduit scheme? I did not admit that. I said that if Sydney could do with an open conduit where there was hardly any fall per mile, and where, therefore, aquatic infusoria of all kinds calculated to be dangerous to the health of the people would accumulate I did not see why an open conduit in a case where there was a velocity of over 1 foot per second could be objectionable. I may have said that an open conduit would be objectionable in a case where it passed through shale country, and where the water might collect saline from the shale which would help to decompose the water. In this instance the water would run through granite country, and the conditions are totally different from those which exist in the case of the Sydney Supply Canal.
885. *Mr. Davies.*] When you were instructed by the local council of Tamworth to investigate the water supply, you were limited to a certain sum? I was urged to try and keep the amount under £20,000.
886. And your estimate of a gravitation scheme was £17,000? Yes.
887. A large proportion of your scheme was an open conduit? Yes.
888. A part of the metropolitan scheme is an open conduit? I believe 43 miles to the reservoir is open conduit, and, as far as I can recollect, 3 or 4 miles on this side of it.
889. The municipal body who employed you were opposed to open conduits? They were after the Government officers had objected to them, but they were not when I first brought the scheme forward. They then congratulated me upon the scheme in every way.
890. Did you subsequently propose to substitute flumes for open conduits? I may have given an estimate, but not officially.
891. At what additional cost do you remember? I do not recollect at the present time.
892. What will be the probable life of a 16-inch double-riveted pipe of the type you speak of? It is hard to say. I introduced wrought-iron pipes from America of No. 18 gauge, much thinner than the pipes alluded to, about eighteen or nineteen years ago, and they are in use at the present time.
893. Have you any data showing the life of steel pipes? It would be, I suppose, slightly longer. They have been collecting records in America. Only lately I read a record of twenty years, but it is not sufficiently long.
894. You know that the Government have undertaken to supply country towns with water-works, extending the repayment of the capital cost and interest over a period of, I think, 100 years? Yes.

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895. What portion of that pipe service and reticulation in the case of these particular works would be likely to be in existence 100 years hence? It is impossible to say. We do not yet know the life of the wrought-iron and steel pipes.
896. Would it not be necessary to renew the whole pipe service two or three times within the period I have named? It depends upon the character of the water. Junee obtains its supply from water containing saline matter, which would have the effect of corroding the pipes much more quickly than in the case of the Tamworth supply.
897. In your opinion would the pipe service, either as suggested by you or by the Department, last for a period of fifty years? I am not prepared to say that; we have no data to go upon.
898. Do you think it probable that it would last for that time? From what I know of the pipes I do not see why it should not.
899. What is the capacity of your storage reservoir? With the extra 6 feet it would be over 163,000,000 gallons, as against 35,000,000 proposed by the Department.
900. What would be the height of your dam? Thirty-two feet.
901. What is the proportion of thickness from the foot to the top? I have not the sections. I think they are with the Tamworth Council. So far as concrete is concerned I may mention that one great objection to using concrete is that we have very little data to go upon as to its actual endurance. We know that lately the concrete blocks used in the breakwater at Cherbourg have given way in several instances. There are two great objections, so far as cement pipes are concerned. One is the erosion of the shell by water containing grit and silt, and the other is the weakening of the shell by the percolation of water.
902. What would be the age of the cement blocks at Cherbourg? The Cherbourg breakwater was completed, I think, in 1868.
903. In this case the water would be purely soft water? That would make no difference to the percolation. The cement is bound to absorb a certain amount of water.
904. In the case of the Cherbourg breakwater, of course you would have the action of the salt water and of the waves to contend with? The conditions so far as the absorption by the cement is concerned would be very similar.
905. You propose to construct a dam partly of wood and partly of stone. I propose to combine wood and stone. That has been used at Hollyoke. The wood would be protected inside by clay concrete to keep it dry at the back and make it impermeable by water.
906. Have you adopted this principle in the construction of your reservoir on the ground of economy? Yes. All the material is there. The timber can be obtained not far off, and there is rock on the ground. If we can get the necessary strength with this material I see no reason why we should use any other. In the case of wood and stone you get economy combined with efficiency.
907. Would such a wall be as stable as a concrete wall? I think more so. We have not yet had an opportunity to judge of the life of concrete.
908. What would be the wind and water pressure at the front of your wall? Those particulars should be at Tamworth.
909. You think you have made every provision for safety? Yes. I have given ten as the factor of safety.
910. What would be height of the mean level of your service reservoir to Peel-street in Tamworth? 200 feet.
911. What would be the level to Brisbane and Raglan Streets? Twenty-one feet.
912. You would be running it very close to get water to the houses there? The area affected is very small and is very little inhabited.
913. It would be the highest part of Tamworth? Yes; as far as I know.
914. Would you be able if your scheme were adopted to deliver water to the second storey of houses in that locality? Yes.
915. By gravitation? Yes. It would not give very much of a flow but we could deliver water. As I have said, however, the area is so small that it would not be of much consequence.
916. I believe the last scheme proposed by the Department was defective in that respect—that the water would not have reached that point? I do not know.
917. You are not familiar with the proposal? No.
918. Your estimate of £35,000 includes the pipe line from Moonbie Springs and the reticulation? Yes.
919. Is there anything further you would like to say? No; except that it would be hardly advisable to tax any water supply scheme with the highest point in any place. It would be like taxing Sydney with the North Shore heights 700 feet above it. The practice is to allow reticulation to wait until it pays to extend it.
920. What is the height of your storage reservoir above Peel-street? 226 feet.
921. What is the Departmental proposal? That would give a height of 1,000 feet.
922. There is a marked difference? Yes; it gives a tremendous pressure upon the pipes. It compels the use of strong thick pipes to resist the pressure, whereas in my case you could use earthenware pipes, and when you wanted to extend the scheme you could have an open conduit for water power, which would be a great saving.
923. Have you obtained the price of the 16-inch pipes from local manufacturers? I know that I can get them at £22 a ton.
924. Would your pipe-line have any sharp angles such as are shown on the Departmental scheme? It has no angles at all.
925. You have not your plans with you? No.
926. What is the saving you estimate by the adoption of your pipe-line as against the pipe-line of the Department? My pipe-line would bring in nearly double the quantity of water to begin with.
927. And there would be a saving in the delivery of the pipes from the railway? That would be very great. They could be delivered on the spot right along the line.
928. Have you any idea of what the saving in that respect would be? I have not.
929. Your proposal of 16-inch pipes would give a much larger supply of water? Yes; and almost at the same cost.
930. *Mr. Lee.*] I notice that you provide 16-inch pipes as against the proposal of the Department of 7-inch pipes? Yes.

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931. Have you adopted that increased size for the purpose of providing sufficient water, if necessary, for irrigation along the line of route? It will give an increased revenue at a very slight increase in cost.
932. Did I not understand that your chief reason for increasing the size of the pipe was to provide additional water along the line of route? And to give water-power as well as irrigation supply.
933. Do you think that if you abandoned the idea of water-power and irrigation the use of 7-inch pipes would answer in the case of your scheme? No.
934. Why? Because I have much less fall. I had a fall of only  $2\frac{1}{2}$  feet per mile to my service reservoir.
935. How far distant is your service reservoir from the Town of Tamworth? Four and a half miles.
936. How far is your storage dam beyond the township of Moonbie? About  $4\frac{1}{2}$  miles.
937. How far would your pipe line be from the village of Moonbie? About  $1\frac{1}{2}$  mile.
938. And how far from the settlement at Tintinhall? It runs through it.
939. Would it not run parallel to the Cockburn river from the dam to the service reservoir? It would follow the railway line.
940. Would it not be close to the Cockburn river for nearly the whole distance? Yes.
941. Is not the land in the vicinity of the Cockburn river on both sides very good? Yes.
942. And that is the land you have in view as fitted for irrigation? Yes.
943. The river flats near Tamworth are at present under cultivation? Yes.
944. And you think that area will in future require water for irrigation purposes? Yes.
945. You think that irrigation ought to be provided for in every scheme of water supply in such a district? Yes; it adds considerably to the revenue to provide for irrigation as well as for domestic purposes.
946. Have you seen the Cockburn River in a state of flood? Yes.
947. Do you think your dam would be sufficient to withstand it? Yes; I have provided for the flood discharge.
948. How do you propose to dispose of the surplus water in the storage dam? I have no proposal, although it would be very valuable both for irrigation and for water power.
949. It will flow over the top of the dam? Yes; it is an overshot dam.
950. Have you seen Moore Creek in a state of flood? I have not. Judging from observations already made in the watersheds of this country the water going into the dam would depend very largely upon the season of the year at which it fell, and also upon the period of dry weather preceding the fall. Observations seem to show that not more than 4 per cent. can be relied upon to go to catchment areas into creeks during a prolonged drought.
951. What is the chief water course in that district? The Peel River.
952. But in the mountains? The Cockburn and Swamp Oak Creeks.
953. From which you propose to take your supply? Yes.
954. Have you had any comparison made as regards the purity of water from the Cockburn and in Moore Creek? I do not see that there can be any more objection to the watershed in the case of the Cockburn than there could be in the case of the Sydney supply.
955. Is there not mining on the banks of the Cockburn? Yes, but it is some 20 miles further up.
956. Is there not some much closer than that? I do not know; there was not when I was there in 1890?
957. If there were alluvial mining going on there, and if it were likely to largely increase in the future how would that effect your storage water? Not much, because we could provide for it, as they have done in California, by making the miners run their water into lateral valleys.
958. Supposing there were no valleys into which to run it? There are plenty of valleys. It is all rough country.
959. There is no law compelling them to do it? If it were necessary in the interests of the health of the people, I suppose a law could be passed as in the case of California.
960. If the miners ran their sludge into the water, would it not be contaminated? Of course, if it were allowed to run into the dam; but that could be stopped.
961. *Mr. Clarke.*] I notice that in 1892 you proposed a gravitation scheme, to cost £17,650? Yes.
962. What will your present scheme cost? £35,000, including a pipe line from the Moonbie Springs.
963. What is the chief reason for the difference in the two estimates? It is chiefly due to reticulation. I put down £5,000 in the first instance, and in this case £14,000 is provided.
964. Would the 16-inch pipes you propose to use bear the same pressure as the 7-inch pipes proposed by the Government? They would not be exposed to the same pressure. One would have seven times the extreme pressure of the other.
965. I understood you to say that in the case of some breakwaters concrete had not lasted well? Yes; and cement pipes in California had been proved to deteriorate very rapidly.
966. To what do you ascribe that? To the absorption of water, and to the deterioration of the material which constitutes the adhesiveness of the cement.
967. You think the scheme you propose would be more economical than that proposed by the Department? I think it would be of far greater advantage. It has fifty times the area of watershed and it is largely in excess of the other scheme in the matter of storage and delivery.
968. *Mr. Fegan.*] You say that you do not know the scheme proposed by the Government? Only from the evidence, but I may mention that what led me to give up Moore Creek was the information I got from the farmers. They had known the creek to be dry for months at a time. It is now only giving according to the evidence 20,000 gallons a day. From report, this has not been a bad season in that part of the country. I noticed in the daily papers the other day that in the rangos, near Armidale, they were having too much rain. If you get only 20,000 gallons in the case of an ordinary season, I do not know what you might expect in the case of a drought. When the Cockburn River with its immense watershed has been known to be dry for months what can you expect in the case of Moore Creek.
969. You know that the height of the reservoir in the case of the Moore Creek scheme would be 1,000 feet, whereas the height of yours would be only 220 feet? I think the height of 1,000 feet would, if anything, be an objection. Of course, if you would bring in a large supply of water with that pressure, it could be used for water power; but with a limited supply I think the economy of the proposal is very doubtful.
970. But we are told that a mere shower of rain is ample to fill the dam? That would not alter my opinion. The filling of the dam would depend upon the condition of the country at the time.
971. Why did the municipality of Tamworth reject your first scheme? Chiefly on account of the open conduit.

- F. B. Gipps, Esq.  
8 Jan., 1896.
972. *Chairman.*] I understand you to say that only 4 per cent. of the water falling upon the watershed of a creek could reasonably be expected to enter it? Yes. That statement is founded upon Mr. Clarke's report from his observations upon the watershed of the Sydney supply.
973. Would you be surprised to hear that I have been informed by the Water Conservation Department that the percentage of water generally reaching the drainage centre might be estimated at 44 per cent. and not 4 per cent.;—you still adhere to your statement? Yes; and in continuing my examination to-morrow, I will give you the observations brought by Mr. Bateman before the Royal Commission in London on this point.

THURSDAY, 9 JANUARY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.  
The Hon. JOHN DAVIES, C.M.G.  
The Hon. JAMES HOSKINS.  
The Hon. WILLIAM JOSEPH TRICKETT.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
ANGUS CAMERON, Esq.  
THOMAS HENRY HASSALL, Esq.  
FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Water Supply for the Town of Tamworth.

Frederick Bowdler Gipps, Esq., civil engineer, sworn, and further examined:—

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974. *Chairman.*] I believe you were at one time employed by the Works Department? Yes.
975. What were your duties? I assisted in laying out the Sydney Water Supply Works. The alternative lines I laid out were adopted by the Department, although they refused the high-level reservoir which I proposed. I also surveyed and laid out water supply works for Forbes, Hill End, Gulgong, and Mudgee. Previous to my employment upon the Sydney Water Supply Scheme, I was engaged by Mr. Manning to survey and report upon his high-level gravitation scheme from the Loddon and Wingecarribee Lakes to Sydney. I was obliged to report against that scheme on account of the insufficiency of the storage. It was open to the same objection as is the Government scheme of water supply from Moore Creek.
976. You informed the Committee yesterday that of the rainfall falling upon an ordinary catchment area about 4 per cent. would be all that would reach the river? Yes, during a long drought.
977. What is your authority for that statement? It is taken from the report by Mr. Clarke upon the Sydney Water Supply. It will be remembered that he was specially brought out from England by the Government of New South Wales to report upon the different schemes proposed for the supply of water to the city. He says, on page 6, "From the commencement of June, 1871, the Cordeaux observations were taken as more nearly representing the average rainfall for such an area, and will be more nearly applicable to the various projects which have to come under consideration. During the dry period alluded to from August, 1875, to March, 1876, when 9.94 inches fell at Sydney, 16.92 inches were recorded at Cordeaux, and the table as constructed calculates the ratio of discharge from rainfall as observed at Cordeaux." Further on he gives the rainfall on the Cordeaux watershed as 16.92, and the discharge at 0.42.
978. Is that statement not qualified in any way? No. He says, "Past experience of droughts, some of them extending over more than one year, and the certainty of their recurrence, makes it necessary to adopt the minimum rainfall as the safe unit for calculation when considering the source of a future supply \* \* \* It would appear, however, that even smaller quantities of rain have fallen, as, in 1824, it is stated that 19 inches only fell, but no authentic record of this seems to exist, and it cannot, therefore, be taken into consideration." Thus Mr. Clarke, in all his reports upon the different water supply schemes for Sydney, adopted a flow of only 4 per cent. of the rainfall as the basis of his calculations for necessary storage, and on that calculation the storage for the Sydney Water Supply is equal to 230 days.
979. Can you give us any other authority upon this point? Yes. Mr. Bateman, the eminent hydraulic engineer in England, in giving evidence before the Royal Commission upon water supply in London, in 1869, referred to the drought of 1868 in Liverpool and Blackburn. In Liverpool, from the 28th April to the 16th October, a period of 161 days, there was a rainfall of 12.20 inches, while the amount collected was 12.5 per cent., the mean average rainfall being 49 inches. In the case of Blackburn the mean average rainfall was 44 inches, and from the 27th March to the 25th September, a period of 182 days, the rainfall was 12.8 inches, the amount collected being 6 per cent. He, however, expressed doubt as to this record. It is estimated that in the West of England, where the mean rainfall averages over 40 inches per annum, there should be a storage of from 100 to 120 days, and in the East of England, where the mean rainfall averages under 30 inches per annum, a storage of from 240 to 260 days. The Hawksley rule is that storage capacity should vary inversely as the square root of rainfall of the mean of three consecutive dry years, which gives 225 days for Tamworth.
980. Supposing we have it on record that on the Cataract River in the greatest drought, when there would be the smallest return of water to the stream, with an estimated rainfall of 10½ inches, 10 per cent. went down the river? That would depend upon the conditions of the rainfall. If it fell at the rate of an inch in two or three days a large proportion would go down, but if it were distributed over six or seven days a very small percentage would flow down. Mr. Clarke's evidence, I take it, must be correct, because it was based on the observations of Government officers at the heads of the rivers, and this gave for the eight months to which I have referred a percentage of 4 per cent.
981. Do you regard Fanning as an authority upon water supply? I should not regard him as an authority in comparison with Bateman. He has collected very valuable data, but I could not accept him as a practical hydraulic engineer. Humber has also written a valuable engineering work, but I can hardly accept him as an authority upon this question.
- 981½. I find that Fanning, on page 77 of his treatise on hydraulics and water supply engineering, says: "When monthly data of the flow of any given stream is not obtainable it may ordinarily be taken upon average drainage areas for an annual flow as equal to 50 per cent. of the annual rainfall; or for different surfaces its ratio of the annual rain, including floods and flow of springs, is more, approximately as follows:—From mountain slopes or steep rocky hills, 80 to 90 per cent.; wooded swampy lands, 60 to 80 per cent.; undulating pasture and wood lands, 50 per cent.; flat cultivated lands and prairie, 45 to 60 per cent.?" I should not consider that of any value at all. It would

would depend entirely upon the conditions of the rainfall. Mr. Clarke was an eminent hydraulic engineer, and he was specially engaged to report upon the Sydney Water Supply Works. I should prefer to take his 4 per cent. as being the result of actual observation.

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982. From the information before you, do you believe that only 4 per cent. of the water falling on the catchment area at the head of Moore Creek would reach the dam as designed by the Government? I think that would be so under certain conditions. Under the conditions of a long drought, for instance.

983. You adhere to that statement, notwithstanding what Fanning says, and notwithstanding that the country is precipitous, and that the water might naturally be expected to flow rapidly to the creek? I should not feel disposed to credit Fanning's statement in comparison with Mr. Clarke's in this particular instance.

984. Apart from drought, and under ordinary conditions, what quantity of water might be expected to go into Moore Creek? It would depend upon the conditions. In the winter time, when the ground would be well soaked, perhaps more than 50 per cent. might flow off.

985. How much would run off in an average season? I could not say.

986. But in a dry season you think that it would not amount to more than 4 per cent.? That is so.

987. You give us that evidence in view of the catchment area under consideration? Yes.

988. In your opinion there will not be sufficient water from the catchment area proposed by the Department to supply a suitable quantity of water for Tamworth? No.

989. You think that an area of 22 square miles is not sufficient in that country under the conditions? No; 22 square miles at the rate of 4 per cent. for the lowest rainfall of 13'67, would only give 182,441,000 gallons a year. Mr. Hickson's pipe supply is given as 547,000 gallons a day. That would amount to 199,555,000 gallons, consequently there would be a shortage of 17,000,000 gallons from the water-shed.

990. How far is it from your storage reservoir to the service reservoir? Nine and a half miles.

991. And how far from the service reservoir to Tamworth? Four and a half miles.

992. Do you know the absolute distance? The absolute distance from Tamworth to the storage reservoir is 14 miles by measurement along the railway line.

993. You propose to lay your pipes along the railway line? Yes; with the exception of the first 2 miles.

994. What is the height of your storage reservoir from the railway station at Tamworth? 177 feet.

995. And what would be the height of your service reservoir? 153 feet.

996. Is that sufficiently high to reach all parts of Tamworth? I think so. It would give 21 feet above the junction of Raglan and Brisbane Streets which was the highest point measured by me.

997. The Department to meet the wants of Tamworth and various outlying areas have thought it necessary to make a reservoir to reach land 100 feet higher than would be reached by your scheme;—do you think it necessary? I do not, and there would be a heavy expense in obtaining reticulation pipes sufficiently thick to withstand the pressure.

998. Do you desire to make any further statements to the Committee? I have previously shown that 225 days storage was positively necessary. We find from Mr. Clarke's report that in the case of Sydney Water Supply there is a storage of 230 days' supply. I have allowed 225 days, taking the Hawksley formula. That would give at the rate of only 300,000 gallons a day 67½ million gallons in the storage reservoir, instead of what the Government provide, only 35,000,000 gallons, so that it would not even provide for 300,000 gallons per day, to say nothing of 547,000 gallons. Upon the basis of a 225 days' supply there would require to be in the reservoir, in order to give 547,000 daily, 123,120,000 gallons. There is, therefore, a shortage of 88,120,000 gallons in the storage reservoir proposed by the Government. In the report of the Commission upon the Sydney Water Supply, it will be found that 48 gallons per diem per capita is allowed, and it is further stipulated that any scheme should be capable of expansion. Mr. Clarke says, "The Commission also define what they consider to be the capacity for expansion that any scheme for the metropolis should have, viz., double the above amount, or 24,000,000 gallons a day." It will be seen, therefore, that there should be provision for 96 gallons per capita. Mr. Clarke also said "The Sewage and Health Board at their meeting on the 28th March, 1876, resolved 'that no supply would be considered adequate unless it would ensure a daily supply of at least 30,000,000 gallons.'" Actually over 100 gallons per capita should therefore be provided for the city of Sydney. Fanning gives the average daily supply per capita in Boston, Brooklyn, and twelve other places, and I find that none of them are under 40, most of them are over 50. The larger per capita allowance here can be understood when we come to consider the different climate. The intense heat necessitates the use of a greater quantity of water for baths and domestic purposes, also for watering the streets. I think, therefore, the allowance of 30 gallons per capita is much too small, having regard to the importance of the town to be supplied with water.

999. What does Sydney use at present? Thirty-four gallons per head, I am informed, but this does not include watering the streets.

1000. And you think that 100 gallons should be provided for Tamworth? In the case of a big town like that we should give sufficient for expansion.

1001. Is there anything further you wish to state? In drawing comparison of the relative values of the two schemes from a financial point of view, the storage capacity of my storage reservoir, taking it at so much per thousand gallons, would cost 4d. per thousand gallons, whereas the cost of Moore Creek storage would be 1s. 6d. per thousand gallons. My scheme would be more valuable by the difference between those figures. If the water delivered by me was nearly double that delivered by the scheme proposed by the Department, my supply would be worth nearly twice the Moore Creek Supply. Then, again, I propose to allow 400,000 gallons a day for irrigation, which would give £500 a year above what would be given by the Government scheme. The revenue from my scheme I estimate as follows:—General rate at 1s. in the £, £1,400; Government offices, £240; meters, £215; livestock, £50; irrigation, £608; horse-power for electric lighting, £150; giving a total of £2,753. The Government estimate a revenue of £2,295. There would thus be a difference in favour of my scheme of £458, which would be 4 per cent. on £11,000. That would be the actual value of my scheme over and above the Government scheme, while for expansion my work would also be cheaper than the Government proposal.

1002. You think the bringing of your supply some 14 miles in such thin pipes is likely to be a satisfactory process? Much thinner pipes have been used with a much greater pressure.

1003. Do engineers generally use pipes of that thickness? They have been used in Victoria.

- F. B. Gipps, Esq.  
9 Jan., 1896.
1004. Where have they been used there? At Mildura, for irrigation and also water supply. My factor of safety using these pipes would be 16, and that is an enormous factor. The water supply pipes in Virginia City, California, were thinner than those I propose. For a pressure of over 200 feet, the water supply pipes are No. 16 wrought-iron instead of No. 14, steel.
1005. *Mr. Davies.*] You are quite satisfied as to the strength and durability of your pipes? Yes. They have been actually laid for water supply works in different parts of the world, and especially in California. I could, if necessary, give you exact information as to the use of pipes in Victoria.
1006. Would a pipe 1-12th inch in thickness be sufficient to resist the pressure you propose? According to the information given to the Committee as to bursting pressure of other pipes my pipes ought to stand a pressure of 991 lb. per sectional inch, that is giving a factor of safety of 16. As a safety of 4 is considered sufficient I am giving four times the necessary factor of safety.
1007. *Mr. Hassall.*] You think the catchment of the Government scheme is not fitted to secure a permanent supply of water for Tamworth? I think it is fit for a limited supply only.
1008. I understood you to say just now that the supply in dry weather would be about 182,000,000, and that would not give a supply of 300,000 gallons a day? But Mr. Hickson says his pipes are to deliver 547,000 gallons a day. He proposes, I conclude, to take 247,000 for power purposes, and I state that the scheme would not supply it.
1009. You think that the scheme would not supply the Town of Tamworth itself? It would not supply 547,000 gallons a day.
1010. Do you not think that by increasing the capacity of the storage reservoir an ample supply could be provided both for domestic and power purposes? If you increased the storage reservoir to provide for three times the quantity provided for at the present time I think it would be sufficient; but I do not think that that would meet the need for expansion. Tamworth is going to be a big town. The fault of most of our works in the Colony is that we have not looked sufficiently forward. I think we should look forward to a population of 30,000 people at Tamworth.
1011. From what source do you anticipate the increased population;—what will attract them to the place? The increase of agriculture on the Peel River. There is a very large area of good land there.
1012. What is the total distance from your impounding dam to the town itself? Exactly 14 miles.
1013. You give the cost of 11 or 12-inch wrought-iron pipes at £1,000 per mile? Yes.
1014. Can you account for the discrepancy between that estimate and Mr. Darley's estimate of £2,700? Mr. Darley's estimate was for cast-iron pipes, and mine was for steel pipes. The carriage alone would be an enormous item.
1015. Assuming the highest point in the town to be 200 feet above the railway station, would your supply serve that spot? I do not think it would. The only portion which would not be commanded by my scheme would be the town blocks above Raglan-street.

## THURSDAY, 16 JANUARY, 1896.

## Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHREY.  
The Hon. JOHN DAVIES, C.M.G.  
The Hon. JAMES HOSKINS.  
The Hon. WILLIAM JOSEPH TRICKETT.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
ANGUS CAMERON, Esq.  
THOMAS HENRY HASSALL, Esq.  
GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Water Supply for the Town of Tamworth.

Hugh Giffen M'Kinney, Esq., Chief Engineer, Water Conservation Branch, Department of Mines, sworn, and examined:—

- H. G. M'Kinney, Esq.  
16 Jan., 1896.
1016. *Chairman.*] What are you? Chief Engineer for Water Conservation.
1017. Do you know the catchment area of the Tamworth Water Supply? Not intimately. I have been in the district, but I have not been over the catchment area.
1018. Do you know the present proposal to supply Tamworth with water? I do not know the details of it.
1019. The catchment area is an abrupt granite country in places, and the granite rocks are exposed;—in country of that kind, what proportion of water would find its way to the drainage centre? That is a matter which depends on several other points besides the catchment area. It depends upon the way in which the rain falls. If the rain falls in large quantities at one time a great deal more water will flow off than will flow off if the rain is very much distributed throughout the year. But I should fancy that from a catchment area like that the proportion which would flow off would not be less than from 30 to 40 per cent.
1020. Have you any knowledge of the rainfall at Tamworth? There is a rainfall of about 29 or 30 inches per annum at Tamworth.
1021. On an area such as I have described with a rainfall of 29 or 30 inches, what quantity might we reasonably expect would find its way into the drainage centre? I should say on an average from 30 to 40 per cent. of the rainfall.
1022. *Mr. Davies.*] How long is it since you visited Tamworth? I should think about three years.
1023. Have you been consulted by the Department with reference to this water scheme? I cannot say that I have. I have been asked for some information in connection with my own experience about the flow of catchment areas, but I cannot say that I have been consulted about the scheme.
1024. Do you know the extent of the catchment area? I do not.
1025. So that you have very little knowledge of the proposal before the Committee? I have not gone into the scheme at all; it lies quite outside my province.
1026. Supposing there is a fall of 4 inches all over an area of 22 square miles, what quantity of water would that give? If that fall of 4 inches took place very rapidly it would very likely give as much as 70 per cent. off the area, but if 1 inch fell at one time and another inch at another the chances are that it would be under 30 per cent.
- 1027.

1027. You could not tell how many million gallons could be expected? That is a matter of calculation.
1028. You are aware that the dam at the foot of the catchment area is estimated to hold 35,000,000 gallons? I was not aware of the actual quantity that the dam will hold.
1029. Would a fall of 4 inches over that area fill that dam thirty times over? On a rough guess I should say that it would. Four inches over 22 square miles is an enormous quantity of water.
1030. Would it be too large an estimate to expect from a rainfall of 4 inches that that dam, with its capacity of 35,000,000 gallons, would be filled thirty times over? That would depend upon the way in which the 4 inches of rain fell. If the 4 inches of rain fell all at once it certainly would fill the dam a great number of times over.
1031. You could not tell the Committee whether we might expect to have the dam filled thirty times? No; I do not consider it is a thing that anybody could say.
1032. You just stated that the average rainfall is from 28 to 30 inches? Yes.
1033. Can you state what quantity it would represent if 4 inches of that actually ran off? Yes. That is a matter of easy calculation; it would certainly fill the dam a great number of times.
1034. Do you know what is the smallest rainfall that they have ever had in the district of Tamworth? No.
1035. If the lowest rainfall in Tamworth has been 18 inches—never less—would you regard a catchment area of 22 square miles as sufficient for supplying and refilling a dam which will hold from 35,000,000 to 50,000,000 gallons? That is a matter I would rather have some time to go into, but, speaking offhand, I believe that it would be.
1036. You have not gone into that? I have not gone into details.
1037. You are not familiar with the plans before the Committee? No.
1038. Have you any details in reference to the flow of water off catchment areas? I have in some cases. I can tell you what proportion of the rainfall flowed off the catchment area of the Murrumbidgee in 1884, but I have no particulars about this river.
1039. *Mr. Fegan.*] How long would it take you to give us that calculation—as to the number of times the reservoir would be filled. Supposing the rainfall to be about 30 inches, and that 4 inches of that goes into the dam, what would the supply be from the 22 square miles? It would be 20,441,600 cubic feet, and that multiplied by  $6\frac{1}{2}$  gives 1,277,760,000 gallons.
1040. Do you think 4 inches is a small percentage to run into the drainage centre out of a rainfall of 28 or 30 inches? I do.
1041. Therefore, you think the Committee is safe in concluding that there will be a sufficient supply for the people of Tamworth? Yes; I think it will be ample.
1042. Considering the population to be 10,000, you do not think there is any danger of the town going short of water with that catchment area? I have not heard what the storage is to be. There is no doubt that the catchment area is large enough.
1043. The storage is supposed to be equal to 50,000,000 gallons, and the rainfall being 28 inches, you do not think there is any fear of the people of Tamworth being short of water if that scheme is carried out? I do not think there is the slightest fear of it.

H. G.  
M'Kinney,  
Esq.  
16 Jan., 1896.

FRIDAY, 17 JANUARY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.  
The Hon. JOHN DAVIES, C.M.G.  
The Hon. JAMES HOSKINS.  
The Hon. WILLIAM JOSEPH TRICKETT.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
ANGUS CAMERON, Esq.  
THOMAS HENRY HASSALL, Esq.  
GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Water Supply for the Town of Tamworth.

Joseph Davis, Esq., M. Inst. C.E., Principal Assistant Engineer for Country Towns Water Supply and Sewerage, Department of Public Works, sworn, and further examined:—

1044. *Chairman.*] What will it cost to increase the storage capacity of the Moore Creek reservoir up to 50,000,000 gallons? The total cost will be £7,460. The difference between the cost of impounding 35,000,000 gallons and the cost for impounding 50,000,000 gallons is £2,148.
1045. It will involve an extra expenditure of £2,148? Yes.
1046. What alterations will have to be made to the dam which you have already described to the Committee? The base of it will be wider, and the level of the crest will be raised by 4 feet 6 inches.
1047. Will there be any alteration in the width of the base? The base will be proportionately stronger to correspond with the difference in height.
1048. What would a service reservoir, to hold a million gallons, cost? The probable cost would be £3,000. The present one cost £1,800, or £1,200, more.
1049. If subsequently another 500,000 gallons had to be put in, what would it cost? About £1,800.
1050. There would be a difference between the cost of doing it now and postponing it? Yes.
1051. What would be the interest on the £2,148? 3-616 per cent.; that would be interest and sinking fund. It would amount to about £77 14s. per annum.
1052. What will it be on the other £1,200, if it is determined to increase the service reservoir? About £4 7s.
1053. The total yearly rate which the Tamworth people will be called upon to pay will be £121 1s.? Yes.

J. Davis, Esq.,  
M.I.C.E.  
17 Jan., 1896.

1054.

J. Davis, Esq., M.I.C.E. 1054. Is there anything else that you desire to say? I will read the following statement, in answer to the evidence of Mr. Gipps:—

17 Jan., 1896. For the information of the Committee, in view of the evidence given by Mr. Gipps, I beg to submit the following observations:—

#### Levels.

The most serious defect in the modified Cockburn scheme is the limited head. The levels will not admit of the water being supplied by gravitation above the broken red line shown on the wall plan. Even at this contour line, which is 73 feet above the railway station, instead of 133 feet as given by Mr. Gipps, the pressure would be so small that in case of fire it would be useless.

#### Dam.

Mr. Gipps states (p. 33, Minutes of Evidence), that the Dooen Dam, in Victoria, resembles—except in its foundations—his proposed dam, its dimensions being nearly similar. An inspection of the cross-sections of the two dams, which are shown on the attached diagram, will show that the designs are totally different in every respect. The Dooen Dam is founded on clay (not rock), and constructed of timber, clay, and gravel.

It would be impossible to keep Mr. Gipps' dam watertight for any length of time if constructed as shown, and the percolation of water would give such a degree of buoyancy to the materials as to make it unstable in times of flood. The top width is also insufficient to withstand the momentum of the large body of water and floating timber which would pass over it after heavy rain storms. I have therefore included in the estimate for a concrete dam, the probable cost of which will be £8,630 15s.

#### Steel Pipes.

In his original scheme Mr. Gipps proposed to use 12-inch and 11-inch wrought-iron pipes 16 B.W.G. thick; he now increases the proposed thickness to 14-inch B.W.G. for 16-inch and 9-inch pipes of steel. Although it is well known that in America even thinner pipes have been used, chiefly for mining purposes, yet it is not considered advisable that any steel pipes above 6 inches diameter intended for permanent waterworks should have a less thickness than  $\frac{1}{2}$  inch, chiefly because there is a practical difficulty in caulking the seams of a thinner pipe without injury to the plates. For this reason, in the estimate I have prepared I have provided for pipes  $\frac{1}{2}$  inch thick, which at £22 per ton will cost £20,185.

My estimate of Cockburn scheme, as modified by Mr. Gipps, is as follows:—

	£	s.	d.
Storage reservoir .....	8,630	15	0
9½ miles of 16-inch diameter steel pipes.....	15,640	2	2
Service reservoir .....	1,800	0	0
4½ miles of 9-inch diameter steel pipes .....	4,544	18	6
Reticulation .....	14,260	0	0
Survey and engineering expenses, &c. ....	4,487	4	4

Total ... .. £49,363 0 0

Turning now to the Moore Creek scheme and to the evidence given by Mr. Gipps respecting the catchment and the quantity of water which may be expected to reach the storage reservoir therefrom, the best authorities state that from mountain slopes such as those in question, 80 to 90 per cent. of the rainfall may be expected to run off the gathering ground. Actual observations, extending over several years in connection with the Sydney Water Supply, show that the Cataract River discharged 44 per cent. of the rainfall. Mr. Fitzgerald, in a paper read before the American Society of Civil Engineers in June, 1892, gives the annual percentages of rainfall collected from the following river watersheds near Boston, U.S.A., as follows:—

Sudbury River; catchment, 75 square miles; hilly with steep slopes; mean for 16 years.....49·5 per cent.  
Cochituate River; catchment, 18·8 square miles; flat and sandy slopes; mean for 29 years.....43·8 „

The average catchment area for 1,000 persons for thirty-eight water supplies given in the "Manual of American Water Supplies" and "Burton," is equal to 331 acres, or 1,630 persons to the square mile. Applying this to Moore Creek watershed, a catchment of 6 square miles would be sufficient.

The average rainfall recorded for Tamworth for the three driest consecutive years is 19·69 inches, and if it is assumed that only 20 per cent. of this ran off the catchment, 1,255,000 gallons per annum would be available.

The drift in the creek indicates that in times of storm 1,362,500 gallons per minute pass down the creek. To give this quantity, a quarter of an inch per hour must have reached the creek from the watershed.

Regarding the storage capacity of the reservoir, I have prepared a diagram giving the rainfall from 1880 to 1895, and the condition of the water during that time in a storage reservoir having a capacity of 35,000,000 gallons at the proposed site at Moore Creek. Assuming that only 20 per cent. of the rainfall runs off, and that 300,000 gallons are used per day, the result shows that with the exception of the year 1888, when 13·17 inches rainfall was registered, the storage capacity would not be seriously strained.

Mr. Gipps throws some doubt on the adequacy of the proposed provision of 30 gallons per head. The daily average consumption in Sydney during 1894 was 13,739,000 gallons, equal to 34·23 gallons per head. The average quantity used in thirteen European cities is given in Panning as 27 gallons per head. It would therefore appear that a reasonable provision has been made in the Departmental proposal.

Mr. Gipps in his evidence refers to the failure last year of the Bouzey masonry dam in support of his contention in favour of combined stone and timber in preference to concrete, and remarks that this dam "was constructed with great care, its foundations were taken down 30 feet to what was considered a solid base, and yet without any other apparent reason except the failure of the cement joints it burst on the 27th of April last year." A reference to the description of this French dam in *Engineering*, of 3rd May, 1895, will show that this is entirely incorrect, and that on the contrary the design was very faulty according to the best English practice, the line of resistance with the reservoir full falling considerably outside the middle third of the section, thus causing tension on the inner face; that the materials used were soft sandstone of very low tensile strength, set in lime mortar; that the foundations were not carried down to solid rock, so that on attempting to fill the reservoir the dam "slid down the valley several inches," and had to be strengthened before it could be used.

There is no record of the failure of a properly constructed concrete dam or masonry dam, designed in accordance with Professor Rankine's rule (which is adopted by the Department) that the line of resistance in straight dams to any pressure should fall within the middle third of the cross section.

In accordance with the instructions of the Sectional Committee I have prepared an estimate for increasing the capacity of the storage reservoir to 50,000,000 gallons, which amounts to £7,460, or £2,148 more than the dam for impounding 35,000,000 gallons. The Engineer-in-Chief for Public Works thinks, however, notwithstanding that the pipe-line will be longer, and in the lower parts the pipes will have to be increased to  $\frac{3}{4}$ -inch thick, that when a survey has been made it will be cheaper to construct a dam at the upper site.

J. DAVIS,

Robt. Hickson,  
Engineer-in-Chief for Public Works.

Principal Assistant Engineer, C.T. Water Supply and Sewerage.

1055. The Engineer-in-Chief thinks it would be better, if 50,000,000 gallons is required, to have it impounded on the other site? He is of that opinion.

1056. It will cost £2,000 more to make the dam hold 50,000,000 gallons? Yes.

1057. And the piping? There will be 1½ mile of piping, which will cost about £950.

1058. Will you require to strengthen your pipes running into the service reservoir? Yes; a very great length will require to be strengthened.

1059. What will that cost? Probably it will cost £2,000 to strengthen the pipes.

1060. That is £2,800, or say £3,000, against £2,000? Mr. Hickson's idea is that the cost of the upper dam will be considerably less than that of the lower one to impound the same quantity of water, and no doubt he is right. The question is, whether, if we have to spend more money on the pipes, we shall save that much in putting in the upper dam. I should like to correct myself as to the cost of the pipes. The difference in the cost of the pipe-line between the upper and the lower dam would be £3,100 instead of £2,900.
1061. *Mr. Humphery.*] Will you explain the difference in cost of the two schemes—that is to say, the upper dam and the lower one? It is impossible to give an accurate estimate of the scheme for the upper dam until a survey has been made, but approximately it will stand thus: The extra length and thickness of the pipes in the lower portion of the pipe-line will cost £3,100 more for the upper site than for the lower site, but the upper site being a better site for a dam than the lower site, the dam will probably be constructed for, say, £1,500 less to impound the same quantity of water. So that it would appear from that that it would be more economical to adopt the lower site.
1062. Was the proposal to adopt the higher site brought under the notice of the Tamworth Council? No; the Tamworth Council have always been led to suppose that we were to keep that as a reserve.
1063. What would be the additional cost of constructing a second dam, assuming that the storage hereafter should be insufficient in the lower dam? A second dam could be constructed to impound 35,000,000 gallons for slightly over £4,000, or to impound 50,000,000 gallons for about £5,500.
1064. What would be the cost to make provision for 50,000,000 gallons? It would be over £37,000.
1065. £37,000 will cover the total cost of the water supply if you carry out a proposal to construct a dam on the lower site to hold 50,000,000 gallons of water? That is correct.
1066. And you can double the capacity by an expenditure of an additional £5,000? Yes.
1067. You have allowed 30 gallons per head for a population of 5,000? The present population is 4,300.
1068. Assuming a consumption of 30 gallons per head per day, that would be about 150,000 gallons a day? Yes.
1069. Then, with a storage capacity of 50,000,000 gallons, you would have a reserve supply for about 160 or 170 days? We should have a reserve supply for twelve months.
1070. But doubling the present population, with a storage of 50,000,000 you will have a reserve supply for about half a year? Yes.
1071. If you have the present consumption of 150,000 gallons a day for a population of 5,000, and assuming that 10,000 people, in round numbers, would consume 300,000 gallons a day, if you had a storage reservoir to hold 100,000,000 gallons, would that give you nearly a year's supply in the reserve? There would be a year's supply for double the present population.
1072. *Mr. Lee.*] I believe that taking the additions to the present Departmental proposal for storing the 50,000,000 gallons, and doubling the capacity of the service reservoir, the additional cost would be £3,348? Yes. That is correct.
1073. The annual interest upon which would be £99 4s.? Yes, including the sinking fund.
1074. You are aware that there is a general desire on the part of the Tamworth people to have an increased storage? Yes.
1075. They did not doubt about the 35,000,000 gallons supplying the present population? No; but they considered that it would be safer to have 50,000,000 gallons.
1076. And also safer to have double the service supply? Yes; but I thought without any rhyme or reason.
1077. At all events to give the increased capacity in both reservoirs the additional cost would be £3,348? Yes.
1078. Has your calculation been sufficiently thought out for the Committee to rely upon this estimate? Yes. The estimate has been made correctly.
1079. The same doubt does not exist there that exists as to the probable cost of the dam on the upper site? No.
1080. Then, in the event of provision being made to give this increased storage, does it not follow that the upper dam will be an invaluable reserve to have in hand? That is my opinion.
1081. Then, if 50,000,000 gallons can be stored under the present proposal, it will serve every purpose until the population of Tamworth doubles itself? Yes.
1082. In the event of the present storage being increased to 50,000,000 gallons, have you any doubt that the reservoir will be filled? I have not the slightest doubt. With such a catchment area as we have there there should certainly be no scarcity of water.
1083. Are there not many indications given by the height of the driftwood in the creek as to the height of the flood-water under certain conditions? Yes, many.
1084. And from them you gather that there must be an enormous body of water passing down? Yes; and I have made calculations which I read to the Committee showing that if there was such a stream as has been indicated in the creek it would fill the reservoir in half-an-hour, supposing the reservoir to be empty.
1085. You are well acquainted with the shifting nature of the country there—the disintegrated state of the granite and the liability of the sand to find its way into water-courses? Yes.
1086. What provision are you going to make to keep the dam thoroughly scoured? I propose to put in two penstocks instead of one, as is usual in such cases, the object being in time of flood to open those penstocks and allow the dam to flush. My own opinion is that that will cause a current along the present bed of the creek at the bottom of the reservoir and the sand will be discharged below the dam.
1087. Do you think that that will be sufficient to clear the bed of the dam for a considerable distance? Yes, I am satisfied that it will. Sand dams might be put in above the reservoir, but they would be a cause of continual expense, as it would always require one man there to keep them clean.
1088. I should like to hear you on the question of the service reservoir;—I am aware that there is a conflict of opinion between yourself and the mayor and aldermen of Tamworth? Well, if the service reservoir is constructed to contain 500,000 gallons it will be sufficient to last the people of Tamworth under present circumstances for three days, which should be ample. But even supposing that a pipe burst in the valley of Moore Creek, it could be repaired and the water turned on again before the water in the service reservoir was exhausted.

- J. Davis, Esq.,  
M.I.C.E.  
17 Jan., 1896.
1089. In other words, you have no doubt about its being ample for the requirements of the city? I am satisfied that the provision is ample, and indeed compared with many other places it is more than ample.
1090. I want you to look at it from this point of view: The township has expressed a desire to have an increased storage there, and they show that they will have an ample margin within the estimated revenue to pay interest upon the extra cost;—under those conditions do you offer any objection to it? I should, because I consider it would be a waste of money, and I do not think they gave any reason for it.
1091. What great objection can there be to granting that increased supply if they are willing to pay for it? I do not see that it would be increased accommodation. If the Tamworth people have as much water in the service reservoir as will keep them going I do not see what more they can want.
1092. I think you have already stated that this extra reservoir could be put down for less money now than it could by-and-bye? Slightly less.
1093. That being the case, is there any objection to the increased storage? There would be just as much sense in making that a million gallons as there would be in making the storage capacity 100,000,000 when there is a consensus of opinion that 50,000,000 would be sufficient.
1094. Laying your engineering calculations aside for a moment, what is the great objection to granting this increased storage if they are willing to pay for it? You cannot control people when they like to be foolish.
1095. We cannot take that view of it. I suppose we may take this view of it: that if this increased accommodation were given now it would be part and parcel of the total cost of the work? Yes.
1096. The redemption of which would take place within 100 years? That would be so; but I should like to state that in future it will be possible to extend these works on the same terms to any extent. That will be when an amending Bill, which it is proposed to bring into Parliament, has become law.
1097. As the law stands at present the original cost is that which is charged by the Government to the Municipality? That is so.
1098. Any additional service after that has to be incurred at the cost of the Municipality? Municipalities cannot afford to do it, so that the work has to go undone, and it will be so until the Bill to which I have referred has become law.
1099. As the law now stands they would have to do this work at their own expense? Yes; if they have funds.
1100. You do not offer any objection to the increased storage of 50,000,000 gallons? No; I favour that.
1101. But you take exception to the increased accommodation of the service reservoir? I regard that as unnecessary.
1102. If the increased service is omitted the total extra cost will be £2,148? That is so.
1103. If the extra service is given it will increase the cost by £1,200? Yes.
1104. *Mr. Fegan.*] In taking the water supply from Moore Creek are you not taking it from a number of residents along the creek? We impound behind the dam sufficient water to supply Tamworth.
1105. In impounding the water you take from a large number of people the water which they have hitherto had access to? There will be sufficient water flowing down after we have taken what we want for Tamworth to supply all the residents there. There are two large branch creeks, the Kangaroo Creek and Back Creek, and if we use all the water which flows from the 22 square miles of catchment area those two creeks will give a sufficient supply for the residents to whom you refer.
1106. How much would those residents have now if they depended on those two creeks;—is it not a fact that they would be entirely without water? No; there is water flowing in Back Creek to my knowledge. I am not so sure as to Kangaroo Creek, but I believe there is water in that creek too.
1107. It would considerably hamper these people for water, would it not? I do not think so. The residents are so few along the creek in the valley that they would have quite enough water after we had taken all that we required for Tamworth.
1108. Are there not as many residents along Moore Creek depending upon the water as there are in the higher section of Tamworth which Mr. Gipps' scheme could not reach? I should say that there is no comparison between the two.
1109. One of the principal objections to Mr. Gipps' scheme is as to its inability to get the water to a certain point? Yes.
1110. Do you know the number of residents along Moore Creek? I should think that there are not more than twelve homesteads at the outside.
1111. Are you going to make any provision in your scheme to give these people water? If they ask for it and pay for it they will get a supply from the pipe.
1112. Have you made any provision in your scheme to provide them with water? There will be sufficient provision to supply them without causing Tamworth to suffer in any way whatever.
1113. You told Mr. Lee that you thought the additional service reservoir entirely unnecessary? Yes.
1114. I suppose, as an engineer, you consider it your duty to see that the work is carried out with as little expense as possible, and in such a way as to afford the greatest facility to the people? With as little expense as possible consistent with efficiency.
1115. That is a point in your profession? I am supposed to look after that part of the business.
1116. In making provision for a storage of half a million gallons in the service reservoir, which will be as much as the inhabitants of Tamworth can consume in three days, you think that that is quite sufficient? Yes.
1117. Will there be spare piping along the line in case of any accident? Yes. Pipes are always kept at certain places along the line for repairing.
1118. Therefore, the people will not suffer as long as they have a three days' supply in the reservoir? No.
1119. *Mr. Humphery.*] Do you know of any country town water supply having a service reservoir containing more than three days' supply? Not under similar conditions.
1120. *Mr. Cameron.*] And in your opinion that is ample? Yes; it is infinitely better than Sydney.
1121. *Mr. Humphery.*] What is the supply for the City of Sydney contained in the service reservoir? Not more than half a day's supply.
1122. *Mr. Hoskins.*] When the reservoir at the Centennial Park is finished there will be more then, will there not? Yes.
1123. What supply is that supposed to hold—will it be a three days' supply? Something like that.

1124. *Mr. Black.*] What was the cost of the Goulburn Water Supply? £55,000.
1125. What is the population of Goulburn? I suppose about 8,000.
1126. And the population of Tamworth is 5,000? Yes.
1127. Then this Tamworth scheme is not only absolutely cheaper than the Goulburn scheme, but it is relatively cheaper as compared with the population? Yes. It compares favourably with the Goulburn scheme from that point of view.
1128. Do you think it will be possible to get figures showing the difference to each of the ratepayers between the two systems? I think I could get them.
1129. *Mr. Hassall.*] Have you any knowledge of the Manly water supply? No.
1130. You do not know what the holding capacity of the reservoir is? No; but I could get it.
1131. Will you let us have that? I will.
1132. Have you made any estimate as to what will be the cost of the silt-pit above the storage reservoir? No. I propose to scour the silt out of the reservoir by means of penstocks which I have described. That will be a cheaper way.
1133. Is the cost of that contained in your estimate? Yes.
1134. Do you think it is necessary to increase the carrying capacity of the storage reservoir to 50,000,000, as asked for by the Council? I think it will be on the safe side—the droughts are very protracted there.
1135. You do not think it necessary to go one and a quarter mile up the creek to the second site? I would not express any opinion beyond what I have already done.
1136. By using the site first selected, and increasing the storage capacity to 50,000,000 gallons, you will not require to make any alteration in the pipe-line, and there will be no additional expense? The only additional expense will be £2,148 for the extra dam.
1137. And in the event of the construction of extra storage above, you would not require an extra pipe-line? No. The water would be allowed to run down the bed of the creek as required from the upper to the lower dam.
1138. *Mr. Cameron.*] Have you, in connection with the Works Department, a system of cement-testing? Yes; I have charge of it.
1139. Have you tested the local cements with reference to the various works? Yes. We have had colonial cements under tests from time to time ever since they have been making them.
1140. How does it compare with the Portland or other imported cements? It is inferior to the home-made cements. It is not so strong.
1141. Is it as good as the German? The German cement from my experience stands first on the list as to quality, the English comes second, and the colonial comes third.
1142. Is the cement that is used for public works tested before it is used for each work, or is there a periodical examination? Every parcel of cement before it is used on any public work is tested, and accepted or rejected without regard to maker or brand or country.
1143. Then, in the event of a local manufacturer wishing to have his cement used in connection with a proposed work, would a special examination take place, or would you go by the result of the past examination? Every parcel would have to stand on its own merits.
1144. Then an application would ensure a test being made? We are testing colonial cement now for works.
1145. *Mr. Wright.*] I suppose you have a standard? Yes; and if the cement complies with the standard in twenty-eight days it is accepted; if not it is refused.
1146. Does the colonial cement work with an equal quantity of sand? The colonial cement is very fine, and if not put through the usual test would in all probability be accepted as very superior cement. In that respect it is like the German. The English cement is rather coarse.
1147. Does it harden quickly? It hardens in some instances too quickly.
1148. Does it crack? Yes, in many cases. It contains a certain quantity of free lime, which is slaked during the process of setting. An internal strain is set up and the cement cracks.
1149. In price I suppose it is about the same? I think so.

J. Davis, Esq.,  
M.I.C.E.  
17 Jan., 1896.

FRIDAY, 24 JANUARY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.  
The Hon. JOHN DAVIES, C.M.G.  
The Hon. JAMES HOSKINS.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
GEORGE BLACK, Esq.  
FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Water Supply for the Town of Tamworth.

Joseph Davis, Esq., M. Inst. C.E., Principal Assistant Engineer for Country Towns Water Supply and Sewerage Department of Public Works, sworn, and further examined:—

1150. *Chairman.*] We wish you to give a sketch showing the height of the reservoir with a supply of 35,000,000 and also with a supply of 50,000,000 gallons, taking it in the driest year when the estimated one-fourth of the rainfall falling on the catchment area would be available for storage purposes? The quantity estimated was 20 per cent.
1151. Twenty per cent. or one-fifth;—have you got that plan? I have; the two plotted on the same sheet, showing 35,000,000 and the 50,000,000 gallons supply.
1152. You hand in the plan showing the storage for the driest year? Yes; for the year 1888. That was the driest year; but 1895 was very near to it.
1153. What rainfall was there in 1888? 13.6 inches.
1154. And your plan shows by the blue line the effect of the supply of 35,000,000 gallons? Yes; with 20 per cent. of the rainfall and 300,000 gallons a day consumption.
1155. And you show in red the same supply under similar conditions with a storage of 50,000,000 gallons? Yes.
1156. How much have you increased the height of the dam? Four feet six inches.

J. Davis, Esq.,  
M.I.C.E.  
24 Jan., 1896.

J. Davis, Esq., M.I.C.E., 24 Jan., 1896. 1157. Just describe the effect of 300,000 gallons consumption on a storage of 35,000,000 gallons in the reservoir, and one of 50,000,000? With 20 per cent. of the rainfall and a consumption of 300,000 gallons a day equal to the requirements of a population of 10,000, twice the present population, with a supply of 35,000,000 gallons the reservoir would have been emptied in the month of September, 1888. But if the capacity were increased to 50,000,000 gallons then under the worst conditions which existed in the year 1888 there would probably be a third of the 50,000,000 gallons still left in the reservoir.

1158. You have made no allowance for evaporation? I have not.

1159. Will you explain why? To begin with, it is very difficult to make an allowance for that in a diagram like this. Secondly in making that allowance the rainfall itself would have to be taken into consideration. Supposing the evaporation to equal 40 inches in the year, against that would have to come the rain that actually falls on the surface of the reservoir which would reduce it considerably. In addition to that the allowance of 20 per cent. of the rainfall on the catchment area is so very small that there will be ample to compensate for any small quantity that would be lost by evaporation.

1160. Therefore 50,000,000 gallons is ample? 50,000,000 gallons is ample for 10,000 people taking the last fifteen years which is a fair criterion as a basis.

1161. Is there any other statement which you desire to make? Yes; I desire also to supplement my statement made to the Committee on the 17th instant, in regard to the provision Mr. Gipps makes in his scheme for motive power and irrigation. In his statement read before the Public Works Committee on the 8th instant, Mr. Gipps states that inasmuch as his proposed 16-inch main from the storage to service reservoir would deliver the required daily supply of 300,000 gallons in 8½ hours, it would be possible to use 642,000 gallons in 15½ hours for generating electricity and irrigation. It has already been shown that Mr. Gipps' proposed 9-inch pipe from the service reservoir to the town is not large enough to give a satisfactory supply to the higher levels for domestic purposes alone; it will therefore be evident that in order to furnish sufficient power for electric lighting (as proposed by the Department) a separate pipe will be required, and it will be necessary to increase the capacity of the service reservoir to at least 1,000,000 gallons. Mr. Gipps' estimate will therefore have to be increased as follows:—

12-inch steel pipe, 5 miles long ... ..	£6,240	0	0
Additional cost of service reservoir, 1,000,000 gallons...	1,200	0	0
Total... ..	£7,440	0	0

If this sum be added to the estimate of £49,363 previously submitted, it will bring the estimated cost of Mr. Gipps' scheme for the supply of water from the Cockburn River, and motive power for electric lighting, to £56,803. It must, however, be borne in mind that even with this expenditure no water would be available for irrigation, inasmuch as the turbine being in Peel-street, would be situated where there is no land to irrigate, and the water therefrom, after passing through the turbine, would run to waste.

1162. *Mr. Hoskins.*] What would be the difference in cost between a service reservoir of 500,000 gallons and a reservoir that would hold a million gallons? £1,200.

1163. *Mr. Black.*] Have you a return of the cost of other water supplies? I have prepared a statement of the provision as far as service reservoirs are concerned for Sydney and the suburbs. I find that when the two reservoirs which at present are being constructed are finished there will be a provision of 32,000,150 gallons. That is equal to about two days' supply; at present there is scarcely a day's supply.

1164. *Mr. Davies.*] If the proposed service reservoir provides 500,000 gallons—enough for three days—if that were duplicated as suggested and provision were made for the storage of 1,000,000 gallons, that would be a week's supply? Yes; with an average of 30 gallons per head of the population of 3,000.

1165. In the dry seasons it has been customary with the Sydney Water Supply to place the people on half supply? I think they have recently had to go on short commons in some of the higher parts of the suburbs.

1166. But even before the water supply was taken over by the Metropolitan Water and Sewerage Board, was it not the custom in dry seasons to reduce the supply to one-half? Yes; I know that from my own experience.

1167. Then if that course were resorted to in this case you can have a fortnight's supply if you have 1,000,000 gallons stored? Yes; but the question is whether it would be necessary.

1168. You do not contemplate any necessity for anything like that? I do not.

1169. You believe that any breakage in the delivery pipe could be repaired within 24 hours? Yes.

1170. So that there would be ample time to make the repairs and continue the supply? Yes.

1171. Without any difficulty at all? Yes.

1172. How will the pipes be connected? Socketed in the usual way with lead joints.

1173. Then if there was a burst in one pipe the water could be shut off at the storage reservoir, and repairs could be made without any great loss of water or much delay? Temporary repairs could be done in two or three hours probably.

1174. You do not anticipate any inconvenience from that source? No.

1175. From your knowledge of the character of the locality in which you propose to erect your service reservoir do you favour any enlarged storage capacity there? I think it will be safer to have the 50,000,000 gallons.

1176. Would it be safer to have 1,000,000 gallons in the service reservoir? I think we have got an ample supply with half a million gallons there.

1177. You do not think it necessary to increase the capacity of the service reservoir? No.

1178. Although it would cost only £1,200? It is not much, certainly.

1179. But if the ratepayers of Tamworth are willing to pay the additional cost, would it not be an advantage to store another 500,000 gallons? I do not think it would be money well spent.

1180. Do you approve of provision being made at the storage reservoir for a larger supply? Yes.

1181. What would it cost? £2,160.

1182. You believe that that would be money well spent? Yes.

1183. It would give a larger supply in case of dry seasons? It would tide over such a season as the year 1888 and last year.

1184. Do you propose to provide for that £2,160 stronger walls? Yes; the whole of the extra expense is absorbed in that way.

1185. So that whilst you provide for increased storage you provide also for increased strength to resist the pressure of water and wind in your storage dam? Yes; to correspond with the extra depth of water in the dam. J. Davis, Esq.,  
M.I.C.E.
1186. What depth would you have to store 50,000,000 gallons? Thirty-six feet six inches. 24 Jan., 1896.
1187. *Mr. Lee.*] On this question of an increased service reservoir you hold very strong opinions. You think that the provision made by the Department will be sufficient? That is my opinion.
1188. I should like to direct your attention to the view taken of it by the Mayor of Tamworth. He was asked this question: "It will make a lot of difference to your storekeepers as to whether you have an ample supply of water for your streets or not?" His answer was: "Yes." I look at the matter in this way: that we should do better to obtain a full supply now, and have 100 years in which to pay off the money, than to have to increase the works at some future time and find the money ourselves. I cannot see what security we should have to offer at any future time for the money we require. The Government would have all our securities on account of the existing water supply. Three and a half years ago the then Mayor and Alderman Smith both said in their evidence that they would support a gravitation scheme up to £40,000, and that the town could pay for it. If we could do so then, I am sure we could do so now.—You see the financial position as put by the Mayor? Yes, and I appreciate it; but the Mayor leaves out of consideration one important factor, which is this: the Country Towns Water and Sewerage Act must be amended in the direction which I have already pointed out; that is to say, to give facility for extending these works. It is the most natural thing in the world to expect that these water supplies must be extended from time to time. The Council has no money, and as the Mayor points out they have no security to give for the money, so that it is almost incumbent on the Government to make provision for the extension of these works.
1189. Then, unless Parliament should pass an amending Act, it will be impossible for that or any other municipality to increase its works? That is so.
1190. Having that in view, do you not think, from an economical point of view and from an engineering point of view, that it will be better to make ample provision in the first instance? If this work could not be extended it would alter the case, but I regard it as a certainty that provision will be made for extending such work. You cannot carry out the whole reticulation for a borough like Tamworth at once. The reticulation must be extended as the town extends, and provision must be made for that work.
1191. As the reticulation area is increased, the supply in the service reservoir also must be increased? Yes.
1192. You view the present storage site as a permanent one for Tamworth? Yes.
1193. I presume that the Committee will be safe in assuming that if this scheme is carried out it will be the water supply for Tamworth for the next fifty years or more? Yes.
1194. I think you view Tamworth as a place which is likely to extend? Yes.
1195. Which at some future time is likely to require a larger supply than the service reservoir will at present provide? Yes; no doubt it will. But all that you can do is to make provision in a scheme of this kind for a reasonable expansion, and we regard the doubling of the present population as that.
1196. Your argument is that a service storage of 500,000 gallons will be ample to meet the requirements of Tamworth for many years to come? Yes, until the population reaches 10,000; and probably, as far as the service reservoir is concerned, beyond that.
1197. It would also follow that if there were an increased quantity stored, which could be supplied for various purposes, there would be a greater demand? Yes. The supply no doubt creates a demand to a certain extent.
1198. Take the present season. If they had an abundance of reticulation at Tamworth, do you not think the water would be very largely used for watering the streets and tempering the heat there? Yes; but in the 30 gallons per head all contingencies of that description are included.
1199. The Town of Tamworth is very scattered? At present it is.
1200. Consequently the mileage of streets would be very large? Yes; and therefore the reticulation will be expensive.
1201. Do you think that 500,000 gallons would be sufficient under conditions like the present? I do. We have had an abnormal time, but as far as the service reservoir is concerned it will be equal to present requirements.
1202. In an arid atmosphere like that would not the evaporation be great? Yes; but it would not be great at the service reservoir. That would have to be taken into consideration in connection with the storage reservoir. The evaporation is in proportion to the extent of the surface.
1203. *Mr. Wright.*] Would a daily supply of 30 gallons per head be about equal to what is used in large cities in other parts of the world? Yes; as far as Sydney itself is concerned the consumption is about 34 gallons a head.
1204. That embraces the sewerage and everything? Yes, I have a list of 13 European towns and they give an average of 27 gallons per head.
1205. Have you the returns of any towns where the conditions of climate are similar to those of Tamworth? I have tried to get some data from our country towns but it is difficult. You cannot get the number of the town population supplied, and they are careless in the estimation of the quantity of water used.
1206. Have you got any returns from towns in the southern part of Europe? In Paris the consumption is 30 gallons a day, in Madrid the supply is 16 gallons a day, Berlin 18 gallons a day. The highest in my list is Glasgow, manufacturing town, 40 gallons a day.
1207. Do you know the latitude of Madrid? I cannot say precisely.
1208. From all the information you can get you consider you have provided an ample water supply for Tamworth? I think the most reliable case we can refer to is that of Sydney and the suburbs, and there the consumption for the last two years has equalled about 34 gallons per head, including the use of water for everything.
1209. Including the watering of streets and flushing sewers? The whole of the water used.
1210. Have you any reliable data as to the consumption of water at Orange? No; it would be almost impossible to get it. They use all the water there direct from the storage reservoir, and I am not sure if they pass it through a meter.

J. Davis, Esq., M.I.C.E.  
24 Jan., 1896.

1211. Supposing they have a six months' drought without any fall of rain, and that is not an impossibility in Australia—it has happened—do you consider then that the provision you have made for Tamworth is ample? I am satisfied that the provision we have made, supposing we have a storage of 50,000,000 gallons, is ample.

1212. Notwithstanding that, there might be six months without rain? Yes.

1213. You are of opinion that even if they had to water the principal streets, and the system of sewerage were introduced in the populous parts of the town, that the proposed supply would be ample? Certainly.

1214. Do you think with 20 per cent. of the rainfall running into this larger dam, with a rainfall of 18·6 inches in a dry season, you would have a sufficient supply? Yes.

1215. Can you tell us what would be the pressure per inch upon the pipes from the storage reservoir to the service reservoir? The 700-feet head at the service reservoir would give a pressure equal to 284 lb. to the square inch.

1216. Do you consider that with that pressure, which is a very large one, you would be justified in using any other pipes than flange and bolted pipes? From actual experiment I know that the joints proposed to be used would stand as much pressure as the pipes.

1217. You think that leaded joints will be sufficient? It will be anchored into the sockets. The sockets will be shaped so as to anchor the lead.

1218. Mr. Black.] I asked you if the scheme would not be less expensive than any pumping scheme that might be proposed, and I asked for the cost as compared with other gravitation schemes; and I am going to ask you to make a comparison between the cost of the Tamworth scheme as compared with the rate-producing capacity of other towns? I hand in a table showing the cost per head of the population of the water supplies of ten country towns, six of which are gravitation schemes and four pumping schemes. But I wish to explain that, inasmuch as in those schemes the water used by the Railway Commissioners is included, the result is not of a reliable nature. (*Vide Appendix.*)

1219. Mr. Hoskins.] Are not the Railway Commissioners paying £1,900 a year for the Junee water? They were to do so, according to the recommendation of the Works Committee, but they have only undertaken to pay £1,500 a year. The matter has not been finally settled.

1220. Mr. Fegan.] I suppose you know there is no regular system of sewerage in Tamworth? Yes; no system whatever.

1221. And, necessarily, there will be a smaller quantity of water used there than there would be if they had a proper system of sewerage? Yes; less, for instance, than in Sydney.

1222. Therefore, they will need a less supply? Yes, until they carry out a proper system of sewerage; then, if they adopt the water-carriage system, they will require more water.

## PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

### Water Supply for the Town of Tamworth.

#### APPENDIX.

##### A.

[To Evidence of J. Davis, Esq., M.I.C.E.]

##### COUNTRY TOWNS WATER SUPPLY.

Table showing Estimated Cost per head of Population.

Town.	Nature of works.	Cost of works.	Estimated working expenses.	Working expenses capitalised at 3·616 per cent	Total estimated capital cost, including working expenses.	Population as per Census. 1891.	Cost of works per head of population.
		£	£	£	£		£ s. d.
Orange.....	Gravitation ...	30,942	200	5,531	36,473	3,237	11 15 4
Nowra.....	" .....	11,467	200	5,531	16,998	1,705	9 19 5
Lithgow .....	" .....	12,054	200	5,531	17,585	3,865	4 11 0
Junee*.....	" .....	42,241	200	5,531	47,772	1,632	23 8 0
Bourke.....	Pumping .....	14,336	700	19,353	33,694	3,149	10 14 0
Dubbo.....	" .....	13,805	660	18,252	32,057	4,555	7 0 9
Albury.....	" .....	45,186	795	21,986	67,172	5,447	12 6 6
Goulburn.....	" .....	55,184	1,094	30,254	85,438	10,916	7 16 6
Armidale.....	Gravitation ...	35,000	200	5,531	40,531	3,826	10 11 10
Tamworth.....	" .....	35,000	200	5,531	40,531	4,602	8 16 2

\* The Railway Commissioners are to contribute £1,500 per annum towards this supply.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

SECTIONAL COMMITTEE.

WATER SUPPLY FOR THE TOWN OF TAMWORTH.

REPORT.

THE Sectional Committee appointed on the 8th January, 1896, to inspect, take evidence, and report upon the proposed water supply for the town of Tamworth, have the honor to report to the Parliamentary Standing Committee on Public Works.

Your Committee left Sydney by train at 6.15 p.m. on Friday, January 10th, and arrived at Tamworth at 4 a.m. on the following morning. They opened their inquiry at the Court-house, Tamworth, at 11 a.m., examining the Mayor and an Alderman of the Borough, who afforded valuable information as to the suitability of the proposed scheme of water supply, and also in reference to the opinion of the ratepayers in regard to it. They thought the Departmental scheme by far the best of the several proposals which had been from time to time under the notice of the local authorities; and referring to the sentiment of the ratepayers, the Mayor doubted whether more than ten persons in the town would be found opposed to the proposed works, and these persons, he pointed out, would probably be found opposed to any scheme of water supply. The Departmental scheme should, the Mayor thought, be altered in only two directions—namely, by the enlargement of the service reservoir, to provide for a week's instead of three days' supply, to meet the contingency of a temporary interruption to the delivery from the storage reservoir; and by the addition, if practicable, of a second storage reservoir, at an elevation higher than the site of the reservoir now proposed by the Department, to meet future requirements. Both witnesses believed that the proposed supply would be adequate to the present requirements of the town, allowing for the use of a considerable quantity of water for manufacturing purposes, providing it could be supplied at a charge not exceeding 8d. or 9d. per 1,000 gallons. The power generated by the scheme could be readily utilised in the town for a variety of purposes. It was estimated that the revenue from the works, including a general rate of 1s. in the £, would be, approximately, £2,300. The population of the town was said to be steadily increasing, and the witnesses thought the municipal exchequer would defray, without any difficulty, the annual charge in respect of interest and principal. In the absence of information as to the details of Mr. Gipps's modified scheme, the witnesses preferred not to express an opinion upon it, but the Mayor doubted whether the scheme could be carried out at the estimated cost of £35,000.

On Monday, January 13th, the Committee inspected the pipe-line, service and storage reservoirs, and catchment area of the proposed water supply, and on the following day they examined the main features of the modified scheme designed by Mr. Gipps for a supply of water from the Cockburn River.

On Wednesday, January 15th, the Committee again took evidence at the Court-house, Tamworth. Valuable information was elicited from Mr. Poate, the District Surveyor, as to the holding of the land within the catchment area. He recommended that the Crown land within the area, as shown upon the tracing submitted by him, should be at once resumed, and that such power as the Government had, upon the conversion of the conditional lease land into conditional purchase land, should

should be exercised in order to provide for any probable extension of the storage reservoir. He believed that 4 inches, or less than one-fourth of the year's rainfall, would enter the reservoir, and that quantity would fill it thirty times over. The site of the storage reservoir was wisely chosen; but he believed it should be sufficiently enlarged to admit of the storage of not less than 50,000,000 gallons. In his opinion the Cockburn River scheme was defective in that the supply would not reach the higher lands of Tamworth. Alderman Lambert confessed that he had at one time entertained doubts as to the adequacy of the proposed Moore Creek scheme, but these had been dissipated by the information afforded by the District Surveyor, and by the assurance that the capacity of the impounding dam could be materially increased without any considerable addition to the cost of construction.

The Mayor was further examined, and stated that after full consideration he was of opinion that the capacity of the storage reservoir should be increased to 50,000,000 gallons. The estimated revenue from the present reticulated area would be ample to meet the additional charge in respect of this work and the suggested enlargement of the service reservoir.

There can, the Committee think, be no doubt as to the need for a scheme of water supply for Tamworth. The present population of the town is 5,100, and there is every indication of a steady increase. At the present time the town is mainly supplied from tanks and wells, which are readily exhausted. The supply is then obtained from the river drift by means of a pump, the cost being approximately 1s. per 120 gallons. There is no adequate supply of water for municipal purposes. The want of an adequate supply is fully recognised by the ratepayers. The Committee are satisfied that a vast majority of them are prepared to accept the responsibility involved in the provision of a suitable supply.

The evidence given by the Municipal authorities confirmed that already tendered to the main Committee in regard to the ability of the town to defray the annual charge upon the works.

The inspection of the Moore Creek scheme disclosed the following:—

*Catchment Area.*—The catchment area lies in abrupt granite country. The water falling within it will rapidly find its way to its drainage centre, Moore Creek. The granite lies generally close to the surface; a large proportion of it is exposed; and the abruptness of the country renders it improbable that there will be any unusual loss, such as might be expected upon a flatter surface or on more porous soil. At the time of the Committee's inspection there was a fair stream of water of excellent quality flowing in the bed of the creek, and it was apparent from the drift-wood and debris deposited at a considerable height above the centre of the bed that an enormous body of water would pass down at a period of heavy rain. The Committee instructed the Principal Assistant Engineer of Country Towns Water Supply and Sewerage, who accompanied them upon their tour of inspection, to furnish a cross-section showing what would be the probable quantity of water passing down at a given point a short distance above the storage reservoir. The Committee are satisfied that the catchment area is sufficient to provide the water likely to be required for the present and immediate future requirements of Tamworth. The soil of the watershed being generally unfitted for cultivation will be devoted entirely to pastoral pursuits. The nature of the country will prohibit any heavy stocking operations; and there is, therefore, no probability of any pollution of the water from such a source. It is, however, shown by a plan furnished by the District Surveyor that a large proportion of the land within the catchment area has been alienated.

*Storage Reservoir.*—The site of the storage reservoir appears to have been wisely chosen. Great care, however, should be exercised by the Department to ensure that on the southern side the dam finds its resting place upon the solid rock and not upon boulders, which might possibly be mistaken for it at this point. At a distance of about a mile above this site is another excellent site where, if the storage proposed in connection with the present scheme were found insufficient, an equal supply could readily be impounded, which could be delivered without an additional pipe-line from the upper to the lower reservoir.

*Pipe-line*

*Pipe-line.*—The pipe-line appears to be properly situated.

*Service Reservoir.*—The service reservoir is situated about one mile and a half from the business centre of Tamworth. It is on an elevation 300 feet above the lowest part of Peel-street, and 250 feet above the railway station. The formation may be described as decomposed trap known locally as ridge gravel. The Committee do not desire to dwell upon the question of the elevation being sufficient to command the town; it is enough to say that the information given to the Main Committee upon this point is correct.

*Resumption of land.*—The Committee are of opinion that an area of 50 acres of land should be resumed at the site of the proposed storage reservoir. The fencing of this area will be sufficient to prevent local pollution. The land is third-class grazing country, its extreme value being £1 per acre.

In regard to Mr. Gipps's scheme, it may be said that the catchment area of, and therefore the flow of water in the Cockburn River is larger than that of Moore Creek but its utilisation for the supply of Tamworth is impracticable for various reasons. The surface level of the storage reservoir proposed by Mr. Gipps is but 177 feet above the railway station. Therefore the bottom of his dam will be but 147 feet above that place which must be reduced again by 24 feet of loss of level between the storage and service reservoirs, bringing the surface level of the latter reservoir to 123 feet above and the bottom of it about 105 feet above the railway station. But, without entering minutely into the merits of the scheme, and accepting Mr. Gipps's levels as correct, it is apparent that it must fall very far short indeed of supplying the reasonably accessible higher land within the municipality, and that if it were adopted a pumping service would eventually have to be incorporated with it. The greater distance over which the water would have to be conveyed would necessarily largely enhance the cost of the scheme, and the distance of the service reservoir from the business centre of Tamworth, 5 miles, constitutes a further, although minor, objection to the work in comparison with the Departmental proposal.

The Committee are of opinion—

- (1.) That a water supply should be provided for the town of Tamworth from Moore Creek.
- (2.) That the quantity of water stored for the use of the town should be not less than 50,000,000 gallons.
- (3.) That the present Crown lands within the catchment area of the proposed supply should be at once reserved, and that the Department of Lands, in measuring lands at present held under conditional lease, should exercise their power under the law to excise those portions required for the present or probable future storage.
- (4.) That the first impounding dam should be constructed in view of the contingency of the construction of a second dam at some future period, and that in connection with the dam at present proposed ample provision should be made to obviate any reduction of its capacity by the accumulation of sand.
- (5.) That an area of not less than 50 acres be resumed at the site of the proposed storage reservoir.

16th January, 1896.

THOS. EWING,  
Chairman.



PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

MINUTES OF EVIDENCE.

WATER SUPPLY FOR THE TOWN OF TAMWORTH.

[TAKEN BEFORE THE SECTIONAL COMMITTEE.]

SATURDAY, 11 JANUARY, 1896.

[The Sectional Committee met at the Court-house, Tamworth, at 11 a.m.]

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. JOHN DAVIES, C.M.G.  
CHARLES ALFRED LEE, Esq.

JOHN LIONEL FEGAN, Esq.  
FRANCIS AUGUSTUS WRIGHT, Esq.

The Sectional Committee proceeded to consider the proposed Water Supply for the Town of Tamworth.

Charles Jeffries Britten, Esq., Mayor of Tamworth, sworn, and examined:—

1. *Chairman.*] You are the Mayor of Tamworth? Yes.
2. How long have you occupied the position of Mayor? Two years.
3. You are aware of the scheme proposed by the Public Works Department for the supply of Tamworth with water? Yes.
4. Do you approve of the scheme? Yes.
5. Speaking in your representative capacity, do you believe that the people of Tamworth approve of the scheme? Yes.
6. *Mr. Lee.*] Some few years ago a proposal was brought forward for the supply of Tamworth with water by means of a pumping scheme? Yes.
7. I believe that did not altogether meet with the approval of the townspeople? The proposal was not favourably received by a majority of them.
8. You understand that the present proposal is to supply the town with water by means of a gravitation scheme, the water being taken from Moore Creek? Yes.
9. I suppose you know that locality? Yes.
10. You have examined the plans, and you are aware of the situation of the storage reservoir? Yes.
11. You know its height above the town? Yes.
12. With reference to the site itself, from your local knowledge, do you think sufficient water can be stored there? Yes, ample.
13. To supply the present population? Yes.
14. And in the event of a large increase of population, you think the supply will be sufficient for the next twenty years? Yes; and by putting in a dam a mile or a mile and a half higher up the creek than the site of the dam now proposed by the Department twice the proposed storage capacity could be obtained.
15. Have you seen Moore Creek in a state of flood? Yes.
16. And, I suppose, there are times when there is very little water in it? At times; but I myself have never seen it dry.
17. Has the Council considered the question of filtering the water before it is supplied to the reticulation pipes? No, we have not. As far as I am personally concerned, I think the water is perfectly pure.
18. You think there is no need to provide a filter-bed? I do not think there is.
19. Would not the water coming down the creek in flood time be very thick? No; it is never very thick; it passes over what you might call granitic sand, and even at a time of heavy flood the water is rarely discoloured.
20. The Committee may take it for granted that the Council have considered that point? Yes; we have never thought it necessary to consider the question of filtration.
21. The Council have raised no objection to the proposed scheme on that score? No.
22. Do you think the service reservoir is in a proper position for the reticulation of the town? Yes; I do not think a better spot could be chosen.
23. The townspeople are quite satisfied with it? Yes; I have heard no complaint in regard to it.
24. Do you know the Cockburn River and its watershed? Yes.
25. You are aware that the proposal has been made by Mr. Gipps to obtain a supply of water from that source? Yes.
26. I believe Mr. Gipps was at one time employed by the Council? Yes.
27. When was that? About five years ago.
28. Had Mr. Gipps any authority from the Municipal Council to appear before the Public Works Committee recently? No.
29. And any evidence which he may have submitted to the Committee must be taken to have been given entirely at his own instance? Yes.

C. J. Britten,  
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30. What is your opinion of the Cockburn River scheme? I was always in favour of the Cockburn River scheme until the Moore Creek scheme was pointed out to me as being far more advantageous than the pumping scheme proposed some time ago. I think the Moore Creek scheme will be of immense advantage to the town, and that it is also preferable on the score of cheapness. Had we adopted the Cockburn River scheme it would have been necessary to use filter-beds, but in the case of the Moore Creek scheme I do not think that is necessary.

31. Why do you think it would be necessary to have filter-beds in the case of the Cockburn River scheme? If it comes down in flood the water is very muddy. The nature of the soil at the head of it is a great objection to it.

32. Are you aware of the difference in the fall comparing the Cockburn River scheme with the Moore Creek scheme? Yes.

33. You are aware of the site selected by Mr. Gipps for the service reservoir? Yes.

34. Would it be a convenient site for the purpose? It would be a convenient site for his scheme; it is the only site he could get, I think.

35. Would you get the same fall for purposes of reticulation? No; we get a greater fall from the Moore Creek scheme.

36. Comparing the two sites for a storage reservoir, you are strongly of opinion that the one proposed in connection with the Moore Creek scheme is the best? Yes; it has a greater head by 150 feet, and will reticulate the whole town.

37. The extra head of water is a great consideration in a town like this, particularly in connection with insurance? Yes.

38. Do you know how far the diggings on the Cockburn River would be above the proposed dam site? About 15 miles or more.

39. Is there any mining upon Moore Creek? No; nowhere near the catchment area at all events.

40. Is it known to be mineral country? I do not think there is any mineral there at all.

41. You think there is no probability of a discovery of minerals there in the future, and of the consequent aggregation there of a number of persons? No; I do not think there is any danger of that.

42. You know of no likely source of pollution so far as the Moore Creek scheme is concerned? I do not know of any.

43. You are bearing in mind that the scheme would be one for all time? I know that.

44. Being satisfied with the position of the proposed works, and the supply to be afforded by them, are you prepared to offer to the Committee any suggestions for improvement? As far as I am concerned, I would rather see a larger dam than they are giving us, that is the only thing.

45. Do you know the quantity of water proposed to be impounded by the dam? 35,000,000 gallons.

46. Why would you prefer a larger dam? Well, the greater the supply of water we get the better for us.

47. The Department propose to store 250 days' supply, would not that be ample? I think we should have plenty of water so that it may be used for electric lighting and things of that kind.

48. You know that the Department have substituted a 7-inch for a 6-inch pipe? Yes.

49. You propose to take your electric power from the storage reservoir? Yes.

50. Considering the ordinary rainfall of the district, and seeing that you would have a supply for 250 days, even if there were no rain, do you not think you would have a sufficient margin for electric purposes? We might; but if there is plenty of water we can always find a way to use it—of course, the more water there is the more cheaply we should be able to sell it to the townspeople. I myself would put in a little Pelton wheel, which would do a great many things at my brewery. Water-power is the cheapest power you can have, and its use would bring in a revenue which would pay for any extra cost which might be incurred in providing the greater supply.

51. How would you increase the storage capacity—by raising the dam now proposed, or by putting in a second one? I leave that to the engineers. One great recommendation of the Departmental proposal is that it would give us an ample supply for immediate requirements, while a second dam could be put up at any future time without interfering with the supply of the town.

52. Would the supply be sufficient in the future in the event of a sewerage system being established here? As far as I understand the matter if we had a sewage farm we should want more water. It would be necessary then to have a second dam. The two dams together would give us an ample supply for almost any purpose for many years to come.

53. The second dam could be put in at any future time? Yes.

54. Whether the works now proposed are enlarged or not there would be an ample supply for all purposes for the next fifteen or twenty years? Yes.

55. You know the quantity of water which is proposed to be stored in the service reservoir? Yes; 500,000 gallons.

56. About how many days' supply would that be? About three or four days, I should say. So far as I am concerned, I should prefer to see a service reservoir containing a week's supply. In the event of a pipe breaking, or anything of that kind occurring, we might have to depend upon the service reservoir only.

57. You think three days storage hardly sufficient? It is not sufficient, I think. In certain circumstances, we should have to cut the ratepayers down to a short allowance as was done at one time in Sydney.

58. You know the increased cost of construction means increased interest, and it is a question as to whether your ratable property can supply it? I think there is no doubt at all as to our being able to stand it.

59. You understand that any increased supply afforded after the works now proposed have been carried out will have to be afforded at the cost of the municipality? I understand that.

60. In the event of there being a large increase in population in the future, and larger service-pipes being required, the municipality would have to bear the cost of it? Yes.

61. You seem to be pretty well in touch with this scheme, and your opinion, I suppose, may be taken to be fairly representative of that of the ratepayers? I have never heard anyone object to it; in fact, I do not believe you would find more than ten persons in the whole municipality opposed to it. I am quite safe in saying that a very large majority of the people of Tamworth are in favour of the scheme.

62. Is there any weak spot in the proposal upon which you would like to comment? No; I have carefully considered the scheme, and I have been over the locality on several occasions. I have talked the matter over with the Engineer of the Department, and I am perfectly satisfied with the proposal.

63. You think there can be no doubt as to the efficacy of the scheme even if carried out as now proposed? There is no doubt but that it would be a good scheme. C. J. Britten,  
Esq.
64. I suppose your Council have assisted the Department in framing its estimate of revenue? Yes. 11 Jan., 1896.
65. You are aware of the area proposed to be reticulated? Yes.
66. And of the cost? Yes. If the Government had allowed us to get our own pipes we could have saved £2,000 or £3,000.
67. Are not some of the pipes already stored here? All the pipes are stored here.
68. Are they steel pipes? No; cast-iron—all sizes.
69. Are any of the 7-inch steel pipes here? Some of the pipes which were intended for the pumping scheme are here. I believe they are 9-inch pipes.
70. How would you have saved the £2,000 or £3,000 to which you refer? We could have had them landed in New South Wales from England more cheaply than they could have been supplied in Sydney. We should have saved nearly £1,000 in railway carriage alone.
71. But you say the pipes are here now? I am sorry to say they are.
72. And you will have to bear the increased cost? I suppose so. It is a swindle all the same.
73. You think they could now be obtained for less money? At the time they were delivered here they could have been bought a great deal cheaper.
74. *Mr. Wright.*] I suppose the Municipal Council has gone into the question of cost? Yes.
75. You know that the estimated cost of the proposed works is about £36,000? Yes.
76. Have you estimated the revenue likely to be derived? Yes; very carefully.
77. And you feel satisfied that the Council can bear the burden of the work? Yes.
78. You do not think the Council will presently come to the Government and say that they cannot make their annual payment, and ask to be relieved of it? I am sure they will not.
79. You know that in other districts of the Colony the municipal councils who have had these works constructed have after the lapse of a year or two asked to be relieved of the annual charge? Yes; I know that.
80. What is your estimate of revenue from the proposed works? Within the reticulation area there will be a general rate of 1s. in the £, giving £1,490. The public buildings, such as the Lands Office, Public School, Police Barracks, and the Court-house, we put down at £240, a very low sum. Then the water which would be supplied to breweries, mills, and factories we estimate at £215. We have put down 5s. a head for horses and cattle, and I estimate that if we use the water for motive power it will save us from £150 to £200, which we now have to pay for the lighting of the streets. There will be a total of about £2,300.
81. Your general rate is 1s. in the £? Yes.
82. Have you any special lighting rate? Yes; 5d.
83. Are there any other rates? There is a watering rate for a part of Peel-street; it is borne only by the storekeepers in the street, and it is 3½d. in the £.
84. You propose an additional rate of 1s. in connection with this supply? Yes.
85. Do you not think that people will complain when they have to pay a rate of 2s. 5d. in the £? I do not think they will. There are plenty of persons in Tamworth paying the present rates who have to buy water at the rate of 1s. for 120 gallons.
86. Then you do not think those persons will object to pay the additional rate of 1s.? No; if you took a vote in the borough to-morrow it would be found in favour of the water supply.
87. Do you think there is any likelihood of your selling water for irrigation purposes along the pipe-line? It might possibly be done; in fact, the pipe-line would come through districts where the selectors have to cart water from here to their farms.
88. The selectors might buy the water for domestic use, but would it pay them to buy it for irrigation purposes? I do not think we would have enough to give them any for irrigation purposes.
89. You do not think there would be sufficient water for that? No.
90. Are there any orchards along the pipe-line? There are a few which have just started, but they are not of any size.
91. Do you think this scheme is likely to encourage the growth of fruit in the district? I think so. Some special areas have lately been occupied in 40 and 60 acre blocks—it is very good land.
92. You said in answer to Mr. Lee you would prefer a larger impounding dam, and a larger service reservoir,—would not that entail a considerable additional cost? I do not think it would be very costly.
93. You are sure the Municipality would be able to bear the additional expense? I think it would.
94. And you would recommend a larger impounding dam and service reservoir? Yes.
95. Of course, that would mean the raising of further revenue to meet the expenditure? Yes; we have revenue at the present time far above what is necessary to pay the annual charge, and you must allow for the increase of the town.
96. But supposing the cost were very much increased? We do not want to increase the cost very much.
97. You think the proposed service reservoir should be at least doubled in size? Yes.
98. And I understand you to be perfectly satisfied with the scheme as far as its financial aspect is concerned? Yes.
99. An officer of the Public Works Department was asked by the Committee in Sydney whether the Department had any official evidence of the Council's acquiescence in the scheme;—have you written to them informing them that the Council approved of the scheme? We have not yet done so.
100. Do you not think it would be wise to do so? Yes; I will have the matter laid before the Council, and I will have the Department notified that we approve of the scheme, and are prepared to incur the liability attaching to it.
101. *Mr. Fegan.*] You are thoroughly acquainted with the scheme proposed by Mr. Gipps? Yes.
102. I refer to his modified scheme? Yes; I have seen plans of it.
103. Have you seen those plans for the first time to day? I am also acquainted with the scheme, to some extent, from what I have seen in the newspapers.
104. Mr. Gipps has not been employed by the Council since the rejection of his first proposal? He has written to the Council pointing out that his scheme was the best put forward, but he has not since been employed by us.
105. What has the Council done with the proposals Mr. Gipps has since made? We have received them, that is all.

- C. J. Britten, Esq.  
11 Jan., 1896.
106. You have not recognised his amended proposal officially? No.
107. You are aware that Mr. Gipps proposes in his modified scheme, instead of having an open conduit, to have a pipe-line following the line of railway? Yes.
108. That would be cheaper as far as the laying of the pipes is concerned? Yes.
109. Do you know that he proposes a storage reservoir holding 160,000,000 gallons? Yes.
110. And a service reservoir holding over a million gallons? Yes.
111. That would be a good water supply, would it not? Yes.
112. But you do not think it would efficiently serve the town? I do not think it could be done for the money—I think we should want stronger pipes to begin with.
113. You think stronger pipes would be required? Yes; you would require to have a good deal larger pipe to bring the water in, and the larger the pipe the greater the cost.
114. Do you think that under Mr. Gipps' modified proposals there are any portions of the town which could not be supplied with water? I think there are some parts of the town which could not be supplied.
115. Have you any guarantee that the higher portions of the town to which you refer would be supplied? None whatever. It seems to me that if you adopted Mr. Gipps' scheme you would require to have a pumping scheme to pump the water from one reservoir to another.
116. You would therefore require to have practically two schemes? Yes.
117. You are aware that with other towns in the Colony where water supply works have been carried out there has been a complaint in connection with the excessive annual charge? Yes.
118. Is it not the fact that in some instances the estimated cost has been actually doubled? I believe it has.
119. You think that in those cases the persons concerned have a right to complain? I think they have.
120. Especially when you consider that they have had no voice in the expenditure, and that they have not participated in the supervision of the work? Yes.
121. Speaking in your representative capacity, you think a rate of 1s. in the £ would not be too much in connection with this water supply? I am certain that the townspeople on the whole would be quite content to pay a rate of 1s. in the £ in consideration of the advantages of a water supply.
122. How many gallons do they obtain at the present time for a shilling? From 100 to 120.
123. And they do not grumble at paying the shilling? They cannot help paying it.
124. Even with the proposed rate of 1s. in the £ the people would be obtaining their supply of water much more cheaply than they are obtaining it at the present time? Yes.
125. You think the capacity of the proposed service reservoir should be doubled? Yes.
126. What do you suppose would be the additional cost? About £1,000, I think.
127. You think the townspeople would be satisfied if the capacity of the service reservoir could be doubled at that cost? Yes; I think it would be a very good business outlay.
128. You are also of opinion that there should be a larger impounding dam? Yes.
129. You have been to the catchment area? Yes.
130. You never heard anything about it when the other schemes were under consideration? Never.
131. How long have you been a resident of the town? About twenty-five years.
132. And during that period you have never been impressed with the possibility of obtaining a supply from this source? I was over the ground many years ago.
133. Is it not rather surprising that when the other scheme was before you this particular locality was not thoroughly explored? I believe this was the very place to which Mr. Alderman Smith first took Mr. Gipps. In those days Mr. Gipps thought it impossible to bring the water in from this source for the money we were prepared to pay.
134. This place has been spoken of before, then, as a good site for a storage reservoir? Yes; it has been known, but it has never been considered in connection with the other schemes.
135. Is it not singular that it should not have been reported upon? I perhaps ought to explain that when Mr. Gipps first made the survey the Council bound him down to an expenditure of £20,000.
136. And I suppose that being bound down to that figure he thought it would be impossible to bring the water from this spot? I suppose so.
137. No provision has been made for irrigation in connection with the Moore Creek scheme? No.
138. But Mr. Gipps' scheme does make provision for it? Yes.
139. Do you think there would be much irrigation under Mr. Gipps' scheme? For my own part, I do not think the scheme could be carried out for the money.
140. But you think the scheme is practicable so far as irrigation is concerned? It could be done, but I do not think you would find persons energetic enough to go in for irrigation to an extent which would make that part of the scheme pay.
141. You know that the cost of Mr. Gipps' modified scheme is about £35,000? Yes.
142. And you think the scheme could not as readily be carried out for that money as could the Moore Creek scheme? I feel confident it could not be.
143. Would you get as good and pure a supply of water from the Cockburn River? You would have a pure supply, but I do not think it would be as pure as the supply from Moore Creek. I do not think you could get a purer supply of water anywhere than could be obtained from Moore Creek.
144. You propose to utilise the Moore Creek scheme for electric power? Yes.
145. Could that power be obtained without waste of water? Yes.
146. The supply of electric power would involve no danger to the ordinary water supply? Not in the least.
147. *Mr. Davies.*] I believe that the resolution originally passed by the Council, and upon which Mr. Gipps acted, limited him to an expenditure of £20,000? Yes.
148. Mr. Gipps sought to obtain a supply for the town from Moore Creek as well as from the Cockburn River? No; I think he only went into the Cockburn River scheme.
149. Did your Council favour the proposal which emanated from Mr. Gipps? Yes.
150. You are not now in favour of the modified proposal which he has put forward? No.
151. Assuming Mr. Gipps proposed to deliver from a service reservoir 1,000,000 gallons daily, as against a proposal to deliver 300,000 gallons daily, which scheme do you think would serve the district best? If the work could be carried out at the same price by all means give us the one million gallons.
152. With reference to the municipalities in which the estimated cost of the water supply has been doubled, I suppose that if the works now proposed cost £60,000 instead of £35,000 you would consider yourselves responsible for the expenditure of only the £35,000? Of course.
- 153.

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153. No municipal council would make itself responsible for an expenditure greater than that to which it had agreed by resolution? Well, Mr. Lyne, when Minister for Works, told us that the Government would not bind themselves to any specific sum.
154. You consider that in approving of this scheme you bind the ratepayers to an expenditure of only £35,000? Yes.
155. Is it intended to call a meeting of the Council to deal with the amended reticulation plans submitted by the Department? I do not think it is necessary to call a special meeting. Our next meeting is on Tuesday, and I will then give notice for the consideration of the question on Tuesday week.
156. Did not the Council pass a resolution approving of the pumping scheme previously submitted by the Department? I do not remember it.
157. Individually, you were strongly opposed to the scheme? Yes.
158. Where do you now get your supply for the town? It is chiefly stored in tanks; of course, we use the old well.
159. Is there any quantity of water in it? Not any quantity, but there is plenty for present use.
160. Have you the same amount of sickness in the district that you had at the time of the visit of the Sectional Committee to inquire into the former scheme? There is not much sickness in Tamworth at the present time.
161. The public health officer said there was at one time a large amount of typhoid;—is there any at the present time? A little.
162. Do you attribute it to the impure water? I do, to a great extent.
163. You were strongly opposed to the pumping scheme? Yes.
164. On more than one ground? Yes.
165. I suppose there is no one in the district who knows the watersheds better than you do? I daresay there are some who know them better, but I know them pretty well.
166. You have been over the catchment area of the Departmental scheme as well as over the catchment area of the scheme put forward by Mr. Gipps? Yes.
167. And which of the two schemes do you favour now? I favour the Moore Creek scheme now.
168. Supposing Mr. Gipps proposed a storage reservoir at a higher level than his original proposal, would you still hold to the opinion that the Moore Creek scheme was the best? If Mr. Gipps can give us a million gallons a day for the same price at which the Government are offering to give us 300,000 then let us most decidedly have a million gallons.
169. You know that in connection with the pumping scheme there would be a considerable annual expenditure? £600 a year.
170. And even then it would not serve the whole town? Yes, I think so, because the position of the reservoir was changed.
171. After the inquiry by the Committee? Yes.
172. To what site was the reservoir changed? It was changed further up the mountain.
173. The capacity of the reservoir was 500,000 gallons? Yes.
174. The same as that proposed in this case? Yes.
175. You have some misgiving as to 500,000 gallons in the service reservoir being sufficient in view of a possible accident to the pipe service? Yes; or in the case of a big fire. I believe in having as large a supply as possible on hand.
176. What do you propose to charge per 1,000 gallons to those who use water by meter? That will have to be decided by the Council. If they give the water cheaply I suppose I myself would be paying them £50 a year. I can get the water for 8d. or 9d. per 1,000 gallons, and unless the Council sell it to me at that price I shall stick to my old plan. If I find I can pump water cheaper than the price at which the Council agree to sell it I shall certainly pump.
177. What does it cost you to pump your present supply? I do not know exactly.
178. Would it be much less than 8d. per 1,000 gallons? It might be 8d. or 9d. per 1,000 gallons.
179. What sort of a pump do you use? A Tangve.
180. Have you to raise your water a good height? Not very high.
181. It would not pay persons following the pursuits of agriculture to pay 8d. a 1,000 gallons for irrigation purposes? No; they could not give anything like that.
182. So that the revenue derived from the scheme in that direction would not be very considerable? We do not estimate any revenue from irrigation, except from the owners of private gardens.
183. What would be a fair price per 1,000 gallons for irrigation purposes? I could not say.
184. *Chairman.*] You said it cost you, perhaps, 8d. or 9d. per 1,000 gallons of water;—in making that estimate do you take into consideration the cost of your well and your pipe? It is down there already. I am reckoning only the working expenses and wear and tear.
185. *Mr. Davies.*] Would you be prepared to take water at 8d. per 1,000 gallons for manufacturing purposes? Yes.
186. You know the Departmental scheme curtails your reticulation to the extent of 3 miles? Yes.
187. And with that curtailment do you expect to obtain the same amount of revenue as from the reticulation formerly proposed? We went through the books, house by house, taking them at the general rate, and the amount came to £1,490.
188. What was the estimate under the proposed pumping scheme? I cannot say from memory, but I believe £1,450.
189. How do you come to estimate more revenue now than under the former scheme when you had 3 more miles of reticulation? More houses have been built within the area proposed to be reticulated.
190. You know that wherever the pipe service passes in front of a property that property is liable to be taxed? Yes; we should get more revenue, of course, from the occupied than from the unoccupied land. There are 900 buildings and public offices in the reticulated area. I may mention that we did not go into matters so carefully on the former occasion as we have done this time.
191. From inquiries made by your officer do you think the estimated revenue would be realised? Yes.
192. You think the revenue is likely to increase? Yes.
193. *Chairman.*] You estimate the amount in connection with the electric lighting power at £150 a year? Yes.
194. Upon what horse-power do you make that estimate? We are using about 40 horse-power now; that is only for the lighting of the streets.

- C. J. Britten, Esq.  
11 Jan., 1896.
195. And for that 40 horse-power you offer £150 a year? Yes.
196. Supposing the Government scheme gave you 100 horse-power, would it not be possible to make the extra 60 horse-power recoup the cost of the supply? I hope so. It is one of my expectations from the scheme. If we did not utilise the extra power we should be very bad business men indeed. There would be a great waste.
197. You believe you could dispose of the other 60 horse-power? Yes.
198. Under the Government scheme you would have to pay 1½d. per 100 gallons, or 1s. 4d. per 1,000 for your water supply;—at the present time you say you are paying 1s. for 120 gallons? Yes, about that.
199. That being so, you think the people will be quite prepared to pay 1½d. per 100 gallons? Yes.
200. They would be very glad to get the water at that price? Yes.
201. You have already informed members of the Committee that your first objection to Mr. Gipps' scheme is that the elevation does not seem to be sufficient? Yes.
202. Another ground is that you regard the catchment area as likely to be polluted by the diggings higher up? Yes.
203. Mr. Gipps' scheme requires a greater length of piping? Yes, it would require larger pipes.
204. And you think the cost would be altogether greater than the Government scheme? Yes; it must cost a great deal more to put down 16-inch than to put 7-inch pipes. The piping would also have to be taken a greater distance. Then, again, it would cost a great deal more to throw a dam across the Cockburn River than across Moore Creek.
205. In general terms, you believe Mr. Gipps' scheme is a more expensive one than he has estimated? Yes; if the estimates for the Moore Creek supply are correct, I should say that the cost of Mr. Gipps' scheme must have been under-estimated.
206. Mr. Davies.] Should the Council approve of the Departmental scheme you will forward their resolution to the Secretary for Public Works? Yes.
207. Did the Secretary for Public Works say he would accept no limitation in the matter of cost? Yes. When the Borough Council resolved that £20,000 should be expended upon a water supply, Mr. Lyne distinctly told a deputation which waited upon him—and I was one of them—that the Government would not bind itself to any cost at all.
208. Do you not think it fair that in submitting the resolution in favour of the Departmental scheme at the next Council meeting you should limit the cost? We will certainly do that.
209. There have been cases where the estimated cost has been doubled? Yes.
210. And in view of those cases you think you are justified in limiting your responsibility for the expenditure to the amount now estimated? Yes; if the Department cannot carry out the work for the amount estimated, it will be their lookout.
211. Have you ever taken into consideration the probable expenditure for renewals and repairs? Yes.
212. And you think the anticipated revenue will meet all fair charges in that respect? Yes. We estimate a surplus after paying the Government what is due to them of something like £600 a year.
213. Mr. Lee.] You also estimate that there will be an increase in the number of houses, and that the revenue will be enhanced from that source? Yes. Tamworth is not standing still; it is increasing fast, and we expect that it will continue to increase.
214. Is your estimate of revenue based on calculations within the reticulation area proposed under this scheme? The estimate I gave you is an estimate in respect of every house within the reticulation boundary proposed by this scheme.
215. The proposed reticulation area does not embrace the whole of the Municipality? No.
216. It leaves plenty of room for extension in the future? Yes; Tamworth is a very scattered town.
217. Mr. Fegan.] How many times have you made application to the Government for a water supply? We have been talking about a scheme of water supply for the last eighteen years.
218. I believe that some time since you lost a valuable block of property through having no water supply? We might have lost it if we had had the best water supply in the world.
219. You think there has been no material loss resulting from your being without a good water supply? There have been a number of small fires in Tamworth which might have been saved if we had had a good water supply.
220. And even from that point of view you think it is necessary that this scheme should be carried out? Yes.

Mr. William Joseph Smith, alderman, Tamworth, sworn, and examined a—

- Mr. W. J. Smith.  
11 Jan., 1896.
221. Mr. Davies.] You are a tanner and an alderman of the Borough of Tamworth? Yes.
222. You were a strong advocate for a pumping scheme when a Sectional Committee last visited your town? Yes, I was opposed to the scheme proposed by Mr. Gipps.
223. You were most enthusiastic in your advocacy of a pumping scheme? Yes; I always advocated it.
224. You had some doubt as to whether Mr. Gipps would be able to carry out a gravitation scheme for the sum of £17,000? Yes; that was one of my reasons.
225. There was a strong division of opinion as to the quality and quantity of the water then proposed to be supplied by the Departmental scheme? Yes.
226. You know that very little examination has been made by the Department of the site of the pump in the shingle of the Peel River? The examination was not made then, it was made afterwards.
227. An officer of the Department put down a trial shaft beside a Chinese garden? Yes.
228. You were not afraid of the pollution of the water, nor were you afraid that it would give out? No.
229. Are you aware that several pumping schemes have been carried out by the Government in different municipalities of a character similar to that which was proposed here—that is, drawing water from the shingle—and that they have given out? I have read that that is so.
230. Cootamundra, for instance, is almost in a state of water famine? I believe so. The circumstances are not quite the same; their river is not like ours.
231. You think your river is more permanent, and that it is likely to give a larger supply? There is a larger deposit of gravel.
232. There was no test by the Department; there was only a shaft of a few feet put down by one of the Council officers? Yes, only 11 feet.
233. Did your Council feel rather indignant with the Department for abandoning the scheme which was so heartily supported by yourself and others? No. We thought the proposal now made was a great improvement upon it.
- 234.

234. You are aware that I myself and another member of the Committee were the only two members who opposed the scheme? Yes.
235. If you now get a good supply by gravitation from Moore Creek you will not regret the delay consequent upon the abandonment of the proposed pumping scheme? Not at all; I think it is a very fortunate thing.
236. Do you think that if the scheme were carried out as proposed by the Department the Council would be able to supply water at a rate cheaper than that at which they could have supplied it under a pumping scheme? I believe we should be able to give the ratepayers a great deal more water.
237. Would you not be able to supply the town more cheaply? I believe the two proposals would involve much the same annual cost.
238. If the scheme now proposed will give an abundant supply, and you find that you have a surplus, it will enable you and your brother aldermen to strike a rate of 9d. or 10d. in the £;—so long as the rate will cover the capital cost and provide for interest and renewals, I presume the Council will be satisfied? Yes.
239. You heard the estimate given by the Mayor of the probable revenue;—do you think those figures will be realised? Yes.
240. If for the purposes of the industry in which you are engaged you could obtain water from the Council at 8d. or 9d. a 1,000 gallons you would become a consumer? I should be very glad to get it; I have been wanting it for a long time.
241. You have not at present a sufficiently good supply of water for the purposes of your industry? No.
242. And you think you would become a consumer if the water were brought from Moore Creek? Yes.
243. Have you in your estimate of revenue taken into account the number of industries which would avail themselves of a permanent supply of water of good quality at a cheap rate? I believe so.
244. During the time you were Mayor was not a resolution passed by the Council approving of the pumping scheme? I think no resolution was passed after the formal resolution asking the Government to carry out a scheme of water supply at a cost not to exceed £20,000.
245. Was there not a subsequent resolution approving of the pumping scheme? I think not. The reticulation has been approved of.
246. That reticulation covered a larger area than the area proposed in connection with this scheme? Yes; I believe over 2 miles have been taken off.
247. And your officers estimated that you would receive a larger sum under the reticulation now proposed than under the reticulation proposed formerly? Yes.
248. You have given a good deal of consideration to the question of a water supply to Tamworth? Yes.
249. You have not confined yourself to the pumping scheme, but you have explored the Moore Creek and Cockburn River schemes? Yes.
250. Which of the two schemes, the Moore Creek or Cockburn River scheme, will, in your judgment, give the best and purest supply of water? The Cockburn River scheme will give the largest supply, but so far as purity is concerned the Moore Creek scheme is infinitely the better one. There is no doubt about that.
251. And the elevation at which it is proposed to locate the storage reservoir would give a much better head for delivery into the service reservoir than you would get under the Cockburn Creek scheme? Yes.
252. Has there of late been any analysis of the well-water supplying the town? Not since the last inquiry by the Committee.
253. You are not in a position to say much with reference to the quality of that water, then? I have heard typhoid attributed to the town well.
254. Do you remember evidence given by Dr. Harris, to the effect that a great deal of the sickness of his patients was due to bad water? Yes, I remember that.
255. Do you think, from your general knowledge, that there is any reason for alarm in connection with the quality of the well-water at the present time? No, I do not.
256. You thoroughly approve of the Moore Creek scheme? Yes.
257. I believe there is some mining going on on the Cockburn River? Yes.
258. How many men are engaged there in mining? I could not say how many hands, but I could obtain the information for you.
259. *Mr. Lee.*] There are a good many fossickers there? Yes, and there are established diggings there. There is some quartz-crushing machinery, I believe.
260. Is Swamp Oak a tributary of the Cockburn River? Yes.
261. You heard the Mayor's replies to the questions asked him as to the suitability of the sites chosen for the proposed storage and service reservoir;—do you corroborate the statements? I do not agree with the whole of them, but generally I do corroborate them.
262. You think his view of the position is the correct one? Yes.
263. Are you in accord with his opinion that the service reservoir should be increased in size? That is a matter for the Engineering Department, based upon their experience in other places.
264. You know how much water the service reservoir will hold;—it is a question for the inhabitants of the town rather than the engineers to determine whether they will have the increased capacity? Providing the pipe does not burst, I do not think we want more than 500,000 gallons.
265. Do you think that a three days' supply is ample to meet any contingency? I leave that matter entirely for the engineers. I could not offer an opinion upon it. In some circumstances a week's supply would not do.
266. If there is any doubt, I suppose you think it would be well to err on the right side, and increase the accommodation? Yes.
267. *Mr. Fegan.*] Has the town well ever given out? No.
268. How many gallons a day do you think it could supply the people of Tamworth with? It can pump about 30,000 gallons a day.
269. That is far short of the quantity given by the proposed water supply? You could not pump enough for the town supply; it is only a small well.
270. The question of a water supply is an important one to the people of the town? Yes.
271. Being an alderman, when you go before your constituents I suppose you are asked your opinion on the question? Yes. Last year when I had to stand for re-election I made a special point of saying that so long as I was an alderman I would advocate the bringing of the water into the town, and I said that if they did not like it they could vote against me.
272. For how long have you been an alderman? Ten years.

Mr.  
W. J. Smith.  
11 Jan., 1896

Mr.  
W. J. Smith.  
11 Jan., 1896.

273. I see that you gave evidence against Mr. Gipps' scheme on a former occasion, and that you were an enthusiastic supporter of the pumping scheme;—the people of Tamworth have not censured you in any shape or form for your disagreement with Mr. Gipps' scheme? Some have done so. I think that altogether I have lost votes by advocating a scheme of water supply.

274. It would seem from that that the people of Tamworth do not want a water supply? Only some of them.

275. What percentage do you think? A very small percentage. Since the election at which I was returned by a narrow majority there has been a dry season, and that has turned the opinion of many persons.

276. I believe you were the first to discover the site of the impounding dam now proposed? No; Mr. Price found it out. I was the first to take Mr. Gipps to Moore Creek. We went 10 or 12 miles up the creek, but he has not seen the higher part. He said, "We will not go any further; the money will not cover it." We were then bound down to an expenditure of £13,500, under the old Municipalities Act of 1867.

277. Has there been any public meeting in Tamworth asking the Government to construct water supply works? No.

278. The proposal has emanated from the Council? Yes.

279. Has any public meeting been held in the town against the proposed scheme? No.

280. *Mr. Wright.*] I suppose a great many of the residents have underground and ordinary tanks? Yes.

281. Probably some of those who are opposing this scheme of water supply have a liberal supply provided by the rainfall on their roofs? Yes.

282. Is there perfect unanimity in the Council as to the advisableness of this scheme of water supply? No, I think not; I think there may be one or two who have some doubts about it.

283. A certain section of the townspeople are also opposed to it? Very few.

284. Is the opposition from the Council against a water supply generally or against any particular scheme? I think you might perhaps find one or two in the Council who are altogether opposed to a water supply, but that is only a matter of opinion; I cannot speak from any vote which has been taken.

285. *Mr. Davies.*] In what year did you take Mr. Gipps up Moore Creek? It was in 1891, the second time I was Mayor.

286. You did not go up to the site of the proposed storage reservoir? No.

287. Have you yourself seen the waterfall? Yes.

288. You have been there since? Yes.

289. What is the largest flow of water you have seen coming over the fall? I have never seen a great quantity coming over; there would be what you would call a good stream of water.

290. Would it fill a 6-inch pipe? If it were running level.

291. That is the largest quantity you have seen falling over? Yes.

292. How far is it from the point to which you went with Mr. Gipps to the waterfall? There is no regular waterfall; there is a series of cataracts spread over a mile and a half. I took Mr. Gipps to within 1½ mile of the site of the proposed impounding dam.

293. Mr. Price went further and made a discovery of the site? Yes.

294. Although you had previously seen the site it never occurred to you that it would be a good site for a reservoir? That is so; it has been a surprise to me that I could have passed over it.

295. The country is all granite rocks and sand? Yes.

296. Has the water been tested? Yes; Mr. Daniell, the chemist at Mr. Britten's brewery, tested it.

297. Judging from his analysis, you think it would be a good pure supply? Yes.

298. Acceptable to the consumers? Yes.

Charles Jeffries Britten, Esq., Mayor of Tamworth, sworn, and further examined:—

C. J. Britten,  
Esq.  
11 Jan., 1896.

299. *Chairman.*] Your estimated revenue does not include any amount from the railway? No.

300. *Mr. Wright.*] The £240 of estimated revenue from public buildings does not include any revenue from the railway? No.

301. *Chairman.*] Will you hand in to the Committee, or forward to Sydney, a list of buildings showing how the £240 is made up? Yes.

302. You now hand in an analysis of water from Moore Creek made by Mr. Daniell, a chemist at your brewery? Yes. [*Vide Appendix.*]

WEDNESDAY, 15 JANUARY, 1896.

[*The Sectional Committee met at the Court-house, Tamworth, at 9 a.m.*]

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. JOHN DAVIES, C.M.G.,  
CHARLES ALFRED LEE, Esq.,

JOHN LIONEL FFGAN, Esq.,  
FRANCIS AUGUSTUS WRIGHT, Esq.

The Sectional Committee further considered the proposed Water Supply for the Town of Tamworth.

Frederick Poate, Esq., District Surveyor, Tamworth, sworn, and examined:—

F. Poate, Esq.  
15 Jan., 1896.

303. *Chairman.*] You have inspected the catchment area of the Moore Creek scheme of water supply? Yes.

304. Do you think sufficient water falls within the area to supply the Town of Tamworth? Yes. I have had prepared a tracing showing the catchment area and the different classes of land comprised in it. I find that it contains 21 square miles.

305. You think that is sufficient? Yes; I have made a rough calculation in regard to it, and taking 18 inches as the minimum rainfall, I find that 195,000,000 cubic feet will be discharged by the creek in the course of twelve months.

306. What proportion of water falling upon the catchment area do you calculate would go into the creek? *F. Poate, Esq.*  
Of the 18 inches 10 inches would be of no use for water conservation, that leaves 8 inches, and of that quantity again I take only 50 per cent.—the remainder is lost by evaporation, by permanent soakage in the ground and by trees and plants and things of that sort; that reduces the quantity to 4 inches or a discharge of about 195,000,000 cubic feet. *15 Jan., 1896.*
307. You think you are justified in expecting that quantity? Yes, in the worst year we can have.
308. How many gallons would there be? About 1,120,000,000 gallons with 4 inches of available rainfall. That is the rainfall which remains to be stored after allowing for all losses.
309. In your opinion, then, a dam providing a storage of 35,000,000 gallons would be filled thirty times over in the course of the year? Yes, that quantity will pass over the dam.
310. You have virtually allowed for a loss of 75 per cent. of the rainfall? Yes.
311. With regard to the catchment area itself, how is it held? I hand in a sketch showing 738 acres of freehold land and 4,435½ acres of conditionally-purchased land and 4,253½ acres of conditionally-leased land; of annually-leased land, 1,754 acres, and of vacant Crown land, 2,259 acres.
312. As to the pollution of the area, do you think there is much likelihood of that? It is not a class of country on which there is ever likely to be close settlement. The general description of the country is rough barren country, hugh granite boulders in places, timbered with box, apple, peppermint, stringybark, and gum, with sandy soil.
313. As to the storage reservoir do you know the position of it? Yes.
314. Do you think it has been wisely selected? Yes I think it is a good site.
315. Did you see the site of the second dam which it might be necessary to utilise at some future time? Yes.
316. Do you think that a good site? Yes.
317. You believe in both the sites? Yes.
318. As to the quantity of water stored, do you think 35,000,000 gallons is sufficient? Not in a climate like this. I should prefer to see a full year's supply stored, say 50,000,000 gallons.
319. Do you offer any suggestion as to the best way in which that could be done? By increasing No. 1 reservoir—the present Government proposal.
320. Your idea is to increase the storage capacity of the first reservoir to 50,000,000 gallons leaving the other storage reservoir for expansion? Yes.
321. Have you any suggestion to make with regard to the catchment area? Yes, I think all the Crown land there ought to be at once reserved and that any conditional purchase or lease falling in should also be reserved.
322. What are your powers provided these persons exercise their right to convert their conditional leases into conditional purchases? The 25th section of the Crown Lands Act of 1889, deals with the conversion of conditional leases into conditional purchases. It says it may be done subject to all provisions of the Principal Act and that Act as to the making of applications, available land, area, deposits, measurement, and all other conditions applicable to ordinary conditional purchases. The 60th section of the Act of 1884, among other conditions, provides that necessary roadways, trigonometrical stations, and sites for, and sources of water supply may be excluded from any measurements.
323. Have you any knowledge of the location of the pipe-line? Yes a general knowledge.
324. Do you regard it as wisely situated? Yes.
325. Do you know where the service reservoir is? Yes.
326. Do you regard it as being in a suitable place? Yes.
327. Do you think 500,000 gallons or a three days' supply is sufficient to store there? I should prefer to see a week's supply. I think the quantity should be doubled in case of accident.
328. Is there anything further you desire to say in reference to the Departmental scheme? No.
329. You have a fairly full knowledge of the scheme Mr. Gipps has recently put forward? Only from what I have seen in the papers.
330. The supply coming down by the Cockburn Valley would be greater than that coming down Moor Creek? Yes.
331. How far is Mr. Gipps' service reservoir from the centre of Tamworth? It is about 6 miles out.
332. Is it wise to have a service reservoir so far from the town? No.
333. You regard that as a defect in the scheme? Yes.
334. Do you know where Mr. Gipps proposes to put his dam across the Cockburn? Yes.
335. Is it a good site? Yes.
336. Do you know the elevation there? I understand it is about 175 feet above the railway station.
337. Is that a sufficient height to command all those portions of the Tamworth Municipality which require water? It would not command the whole of it.
338. Do you think a head of 170 feet on the Cockburn Creek is sufficient to control the reasonably accessible land within the municipal boundary of Tamworth? If the levels are correct the difference between the site of the dam and the railway is 175 feet; that would give a head for houses within 100 feet of the level of the railway station.
339. Mr. Gipps would lose 70 feet by the water coming in? He could bring the water in at a loss of about 3 feet a mile.
340. He would therefore lose 45 feet? Yes.
341. And what about the other 32 feet? I allow for the depth of the dam and giving a little head of water for houses that are near to the 100 feet limit.
342. Do you think 100 feet above the railway station is a sufficient head for Tamworth? No; because the town is extending up the hill. Under Mr. Gipps' scheme it would be necessary to have pumping as in Sydney; that would eventually have to be done.
343. What distance is it from the storage reservoir under Mr. Gipps' scheme to the business centre of Tamworth? About 15 miles.
344. Do you think the Cockburn Valley catchment area is more likely to be polluted than is the Moore Creek catchment area? I do not think so; it is simply grazing country.
345. The mining would not have that effect? It would affect it very little.
346. You do not pay much attention to that aspect of the case? No.

Mr. James Lambert, alderman, Tamworth, sworn, and examined:—

Mr.  
J. Lambert.  
15 Jan., 1896.

347. *Mr. Davies.*] You are an alderman for the Town of Tamworth? Yes.
348. Are you in favour of or against the proposed scheme? I do not think I can be said to be against the scheme.
349. What knowledge have you of the Moore Creek scheme? Some considerable time ago a number of us went up and inspected certain portions of the catchment area and the reservoir site.
350. Do you disapprove of the scheme? To some extent.
351. For what reason do you disapprove of it? I do not think the catchment area is sufficient.
352. Supposing a competent professional man stated there would be ample water from a catchment area of 21 square miles to afford an abundant supply of water to Tamworth for the next twenty years? If that opinion has been expressed by a professional man I should be inclined to give way. I would not venture to set up my opinion against that of a professional man.
353. All you are anxious for as an alderman is to see a permanent supply for the people of the borough? Yes.
354. Your desire is that it should be procured as cheaply and as abundantly as possible? Yes.
355. In what other particulars do you disapprove of the Departmental scheme? I have no objection to it except that I think the catchment area is not large enough. That was my first impression.
356. You have no other doubt as to the catchment area? No; and if Mr. Poate thinks it sufficient I am willing to yield on that point.
357. If Mr. Poate has said the rainfall within the catchment area would be sufficient to fill the dam thirty times over in the course of the year supposing only 4 inches went into the creek would you be satisfied with that expression of opinion? I should be quite satisfied.
358. It would remove any doubt in your mind so far as the catchment area is concerned? Yes.
359. Is there anything further you wish to state? Yes. I have been informed that in certain years the creek runs dry.
360. Do you not know that it is proposed not to depend upon the creek alone, but upon the rainfall spread over the 21 miles—the rainfall would be intercepted and caught in a reservoir estimated to contain some 35,000,000 gallons? Supposing the creek runs dry.
361. That would make no difference? I thought it would.
362. If you stored 35,000,000 gallons in the reservoir at the foot of the catchment area what difference would it make if the creek went dry below. It is proposed to store sufficient water for the supply of Tamworth for a period of 250 days. These facts being brought under your notice do you still object to the scheme? You must fill your dam in the first instance, and if the creek is not running in hot weather like the present how are you going to fill it?
363. The rainfall upon the area of 22 square miles, there being only one storm upon it, would more than fill your dam? If we only had that storm.
364. Is the weather ever so dry that there is no storm? It is dry enough for anything now.
365. How long is it since you had rain in the district? We have not had any for a month or two.
366. What is the average rainfall, say, for a period of five years? I do not know.
367. Have you any further statements to make? To my mind a question of this kind ought to depend upon a vote of the ratepayers.
368. That is a matter for the Municipality, not for the Committee. Is there any large number of ratepayers in the borough who are sceptical as to the proposed supply? Yes.
369. How many would there be approximately? I should say there would be a few score.
370. Do you think there would be 100 persons? I should say more.
371. You think there are over 100 persons in the Town of Tamworth who do not want a water supply? I believe there is a number of ratepayers, and the proper thing to do would be to give them a chance of saying "Yes" or "No" to the scheme, as they will be responsible for the repayment of the cost.
372. Is it because they catch water in their own tanks that they do not want a water supply? A good many have their own tanks.
373. Is there any other point in connection with the Moore Creek scheme on which you would like to make any comment; do you know of any other point in the scheme? I cannot think of any just now.
374. *Mr. Lee.*] Your difficulty appears to be that the proposed catchment area would not afford a supply sufficient to meet the requirements of the people of Tamworth? That was my difficulty.
375. You are aware that the proposal is to store 35,000,000 gallons; do you think it would be desirable to provide for a larger storage than that? I think 35,000,000 gallons would be ample for the present. It would be from seven to eight months' supply.
376. Supposing the storage could be increased to 50,000,000 gallons, which would of course mean a much more abundant supply, and supposing that the rate proposed to be struck within the reticulation area would still pay the interest upon the additional cost of construction, would you under those circumstances suggest that the increased quantity be provided? Certainly, if it would keep us within the limit of the shilling rate, and prove satisfactory to the ratepayers.
377. If the revenue derivable from the rate would pay the interest on the increased cost of construction, you think it would be advisable to afford increased storage? Yes, in time to come.
378. You still have some doubt as to whether the rainfall would be sufficient to fill the reservoir; are you aware that in December last 7 inches of rain fell in the district? I know there was a great quantity of rain, but I cannot exactly say how much.
379. Had the dam been constructed it could have been filled by any storm at that period? I suppose so.
380. There is more or less rain here every year? Quite so.
381. Therefore, any danger which might arise from the absence of rain would be to a great extent removed if the storage were increased? Yes; I feel satisfied upon that point now.
382. *Mr. Fegan.*] If I am not mistaken, another reason you are opposed to the scheme is that it has never been properly before the ratepayers? Quite so; that is my main reason.
383. You believe it ought to be put before them? I do.
384. What method would you adopt—of course you are aware that the Committee cannot assist you in that direction? Quite so; I made a suggestion at last night's meeting of the Council, but I was ruled out of order.
385. Have there been any petitions to the Council for or against the scheme? Not to my knowledge.
386. Have there been any public meetings held against the scheme? I do not think so. 387.

387. Therefore, while there may be a number of persons who are not against the scheme, they have not taken any decided step in opposition to it? Quite so.
388. They knew from the announcements in the press that the Committee were about to visit Tamworth to take evidence upon the question? Exactly so, only the local newspaper notice was too short.
389. But none of those opposed to the scheme have put in an appearance? I believe some are present now.
390. If you waited until everyone was favourable to the proposal do you think you would ever get a scheme of water supply? I do not suppose we should; but to my mind the majority of ratepayers should vote on such a big expenditure.
391. You yourself think it is necessary to adopt this scheme? I believe it is. Individually, I have always been in favour of a water supply.
392. You are entirely in favour of some scheme of water supply for Tamworth? I have been all the way through so far as I am personally concerned.
393. The scheme of the Department is one which you can fairly stand behind? Yes, so far as I have seen into it.
394. You think it would be a blessing to Tamworth if properly carried out? Yes, so far as I can see at present.

Mr.  
J. Lambert.  
15 Jan., 1896.

Mr. Edward Cooper, Tamworth, sworn, and examined:—

395. *Chairman.*] Have you been long resident in Tamworth? Twenty-two years.
396. Do you know the scheme at present under consideration? I know nothing at all about it.
397. You desire to limit yourself to general principles? I am totally against the scheme of water supply to Tamworth.
398. Why? Because the present supply in the tanks and in the town well is an ample one.
399. Have any people in the town authorised you to speak for them? No.
400. In your opinion the present supply from the drift is ample for all requirements? Yes.
401. Do you water your streets in Tamworth? Only one street.
402. Do you think it an advantage to water the streets and flush the drains? I do not think it is necessary at present.
403. *Mr. Fegan.*] What is your objection to the proposed scheme of water supply? That it is not required.
404. How many gallons do you use daily? I could not say. Eight inches would supply me for a year. Assuming the rainfall to be 28 inches, I should have 20 inches in excess of what I require.
405. But there are a number of other persons living in Tamworth, and they have asked for a water supply? A few of them.
406. How many do you think? I could not say, perhaps one-third or a little over.
407. Is not the expense the chief obstacle in your way? It is no obstacle whatever.
408. If a water supply could be given you for nothing you would not have it? No.
409. *Mr. Davies.*] You are a property owner? Yes.
410. You find the rate of 1s. 5d. in the £ pretty stiff at the present time? It is quite enough.
411. You do not want to pay another rate of 1s. in the £? I object to a scheme of water supply because it is not required.
412. Do you know how much water is lifted from the town well every day? I do not; but in any case I consider the provision now made quite sufficient.
- 413-4. Would not an abundant supply of water be a great convenience to the residents of the district;— would it not promote their health and happiness? We have a sufficient supply already.
415. What quantity of water have you stored at your house? Something like 2,000 gallons. That is for my own residence. There is also a well averaging 50 feet of water all the year round.
416. Has the supply in your tanks ever run short? Never.
417. Have you a provision for a plunge and shower bath at your residence? Yes.
418. And you say you are entirely opposed to a scheme of water supply? Yes.
419. You would have to pay 5 per cent. on the assessed value of your property if you had a scheme of water supply? Yes, and something besides, I fancy; but I do not object to the scheme on that ground.
420. *Chairman.*] You are dependent personally upon your well, and that is a good standby? The rainfall supplies me; I scarcely ever use the well.
421. Is it a porous soil here? Yes; there is plenty of drainage.
422. Water would easily get through the soil? Yes.
423. Are there any cesspits about Tamworth? Yes.
424. And you have your source of water supply and your cesspits in the same porous soil? I use my well-water for irrigation.
425. I suppose some of the townspeople have to use well-water? Yes.
426. And you think that does not matter? I do not think so, because the cesspits are cemented.

Mr. E. Cooper.  
15 Jan., 1896.

Charles Jeffries Britten, Esq., Mayor of Tamworth, sworn, and further examined:—

427. *Mr. Lee.*] Since you gave evidence the other day you have had an opportunity to inspect the site of the proposed dam at Moore Creek with the Principal Assistant Engineer for Country Towns Water Supply and Sewerage and the Committee? Yes.
428. You clearly understand that the proposed storage would be about 35,000,000 gallons? Yes.
429. The Committee wish to know definitely from you whether you think that storage would afford a sufficient supply? I do not.
430. To what extent do you think it should be increased? I think a storage of 15,000,000 or 20,000,000 gallons might be added to it.
431. Giving a total of 50,000,000 gallons? Yes; I think we should be safe then.
432. Have you estimated the cost of the additional construction required to afford that storage? I have not made a calculation, but I should say it could be done for £1,500.
433. Supposing it cost £2,000? I should vote for it being carried out.
434. The interest charge being £80 a year? Yes.

C. J. Britten,  
Esq.  
15 Jan., 1896.

- C. J. Britten, Esq.  
15 Jan., 1896.
435. That would still leave you well within the revenue for the water rate? Yes.
436. If the additional supply can be afforded at an expenditure of an additional £2,000, your opinion is that the work ought to be carried out? Yes.
437. It would be immensely cheaper, you think, to make this extra provision in the original construction of the work than to add it afterwards? Yes.
438. You have seen the site suggested for an additional reservoir about 1½ mile above the site of the reservoir now proposed? Yes.
439. You do not think the additional storage could be provided for there at some future time as cheaply as it could be provided now? No; I think the best course is to increase the size of the dam now proposed. The additional supply could be afforded much more cheaply in that way.
440. Coming now to the service reservoir, have you thought over your suggestion that that should be increased in size? Yes; I am still of opinion that it would be better to have 1,000,000 gallons there instead of 500,000.
441. At a cost of, say, another £1,000? Yes.
442. Or £40 a year more in interest? Yes.
443. Making a total increase to the interest charge for the additions you now propose of £120? Yes.
444. You think the ratepayers would be satisfied to have the expenditure increased to that extent in order to afford a larger supply? Yes.
445. It will make a lot of difference to your storekeepers as to whether you have an ample supply of water for your streets or not? Yes. I look at the matter in this way: that we should do better to obtain a full supply now, and have 100 years in which to pay off the money, than to have to increase the works at some future time and find the money ourselves. I cannot see what security we should have to offer at any future time for the money we require. The Government would have all our securities on account of the existing water supply. Three and a half years ago the then Mayor and Alderman Smith both said in their evidence that they would support a gravitation scheme up to £40,000, and that the town could pay for it. If we could do so then, I am sure we could do so now.
446. *Mr. Davies.*] Do you think the Council would be prepared to endorse the additional expenditure in order to obtain the additional supply? I think so. I think that if the matter were laid before them in a businesslike manner they would see that as business men they would have to agree to it.
447. Do you think the provision of the additional supply would increase your income? I cannot say definitely, but I should think that if we had an abundant supply of water we should receive a certain amount of revenue for its use for hydraulic purposes.
448. Do you, as Mayor of the borough, think that the additional income would be sufficient to pay the cost of the extra provision? I cannot exactly say that. Speaking for myself, I can only say that if we had an ample water supply I would do one or two things with water-power at my brewery.
449. You yourself would become a large consumer at a reasonable rate? Yes.
450. Have you any outstanding rates at the present time? Very few indeed. The principal amount is on account of unimproved blocks—unoccupied land—the owners of which cannot be found; the total amount of our arrears for 20 years is £383 11s. 8d.
451. You think that, as Mayor of the borough, you voice the opinion of the ratepayers in this matter? Yes, for the last ten years there has been an agitation in the borough for a water supply. During the whole of that time there has not been a single public meeting held in opposition to the proposal.
452. For how long have you held the position of Mayor? For two years. I have been in the Council six years.
453. Have you had any representations made to you officially as to the shortness of the present supply? A number of persons have complained to me that they have had no water. The greatest opponents of the scheme have been those who did not know to what extent they would have to be rated. Now that they understand the matter better, they all see that the supply will be to their advantage rather than to their disadvantage.
454. What provision beyond the one which has been spoken of was made to supply the town? None whatever.
455. Has the number of houses within the borough increased since the last inquiry here by a Sectional Committee? Yes.
456. Your income is fast increasing? Yes.
457. The Council has a system of lighting by electricity? Yes.
458. You have not calculated the income you would derive from that source for public and private supply? No; we have had applications in connection with new buildings in Tamworth to supply the electric light. Six years ago, when we went in for the electric light, there was a strong feeling in Tamworth that the Council had done wrong. That feeling was expressed through the public press very strongly indeed. It was said that instead of going in for an electric light we should have gone in for a water supply. I have never known public feeling here condemnatory of a water supply; it has always been in favour of it.
459. *Mr. Fegan.*] You think the construction of a bigger storage reservoir would give greater security so far as the supply is concerned? Yes.
460. And you think that security is worth the additional price you would be paying for it? Yes.
461. *Mr. Lees.*] How does the Town of Tamworth rank in the list of country towns? I think it is about the sixth.
462. Were many new buildings erected last year? I think about forty-five.
463. There is an annual increase in the number of buildings in the town? Yes.
464. You are not aware of any circumstances which would lead one to suppose that the town was likely to go backwards? No; I think it is bound to go ahead.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

Water Supply for the Town of Tamworth.

SECTIONAL COMMITTEE.

APPENDIX.

A.

[To Evidence of C. J. Britten, Esq.]

ANALYSIS OF WATER FROM MOORE CREEK.

Tamworth, 25 July, 1895.

Dear Sir,

In accordance with your suggestion, I took a sample of water from Moore Creek, at the proposed site of the dam, on 15th July. The water was clear and bright, and its temperature 45 degrees Fahrenheit. On analysis, the following results were obtained :—

	Grains per gallon.
Silica .....	.35
Carbonate of lime .....	2.66
Carbonate of magnesia.....	2.92
Carbonate of soda .....	.92
Sulphate of magnesia .....	.95
Chloride of sodium .....	2.19
Undetermined matter .....	1.77
Total solids.....	11.76
Free ammonia .....	.001
Albuminoid ammonia .....	.0056

The water contains more mineral matter than one would expect to find in granite country, but considerably less than the waters in the various town wells analysed by Mr. Hamlet in 1892. See below.

	Analyst.	Total Solids—grains per gallon.
Tamworth well, A, new .....	Hamlet.....	17.92
"    B, Chinamen.....	" .....	24.08
"    C, old, Chinamen .....	" .....	30.66
"    D, town well, tap .....	" .....	30.24
"    E, town well, bucket.....	" .....	30.01
"    Brewery.....	Daniell .....	65.38
Moore Creek .....	" .....	11.76
Sydney Supply .....	Hamlet.....	6.53

I am of opinion that, as a rule, the water will be much softer, on account of the large percentage of rain-water that will always be in the dam; for after the present long-continued drought the water running in the creek must be at its hardest.

The amount of albuminoid ammonia is somewhat large for a first-class drinking-water; but that, too, should be much diminished when diluted with rain-water.

In conclusion, I am of opinion that this water is far more suitable, for domestic and industrial purposes, than that obtainable from any wells in the Tamworth valley.

Yours truly,  
L. C. DANIELL, F.C.S.

[1 Plan.]



# TAMWORTH WATER SUPPLY PLAN SHOWING PROPOSED GRAVITATION SCHEME

Catchment Area about 22 Sq. Miles

SCALE  
0 10 20 30 40 50 60 70 80 90 100 Chains.



*L. Davil.  
29. 10. 95*

*W. H. ...  
29. 10. 95  
Treasurer in Charge  
for Public Works.*



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

**TAMWORTH WATER SUPPLY.**

(PETITION FROM CERTAIN RATEPAYERS OF THE MUNICIPALITY OF TAMWORTH, AGAINST.)

*Received by the Legislative Assembly, 13 May, 1896.*

To the Honorable the Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned Ratepayers of the Municipality of Tamworth,—

RESPECTFULLY SHOWETH:—

That your Petitioners are strongly opposed to the scheme for supplying the town with water, now before the public, and indeed to any other project at present which will involve large expenditure of money and consequent taxation.

The Municipal Council have already incurred heavy debts, which, so far from being reduced, will be largely increased this year by work of a non-productive nature, now in course of construction.

That the town has now a very fair supply of wholesome water in the town pump, in wells, and in tanks, which never entirely fails, and which is sufficient for present purposes, which is more than can be said of some towns which have expensive waterworks.

That business is in a very depressed condition, and as property has greatly depreciated in value within the last few years, in many cases to the extent of 50 per cent., an additional tax of 5 per cent. on rent, which a general water scheme is likely to involve, would be very severely felt by the residents, and would tend to deter strangers from coming to settle in the town.

Your Petitioners, therefore, pray that your Honorable House will take the premises into your favourable consideration, and stop all further proceedings in this expensive project.

And your Petitioners will ever pray.

[ *Here follow 523 signatures* ]



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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**LIQUOR TRAFFIC LOCAL OPTION BILL.**

(PETITION FROM HIS LORDSHIP THE BISHOP OF SYDNEY, CHAIRMAN OF A PUBLIC MEETING HELD IN SYDNEY ON 26TH INSTANT, IN FAVOUR OF.)

---

*Received by the Legislative Assembly, 27 October, 1896.*

---

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned Residents of Sydney,—

HUMBLY SHOWETH:—

That at a duly-convened Public Meeting held in Sydney on the 26th instant, of which your Petitioner was appointed Chairman, the following resolution was passed by an overwhelming majority:—

“That this Public Meeting of Citizens expresses its satisfaction at the introduction of the Liquor Traffic Local Option Bill in the Legislative Assembly, and in view of the manifold evils arising from the prevalence of intemperance in the community, urges upon Parliament the importance of immediately passing the measure,” and “that the Chairman be requested to sign and present this Petition to the Assembly.”

Your Petitioner therefore respectfully prays your Honorable House to consider the foregoing resolution.

And your Petitioner, as in duty bound, will ever pray.

WM. SZ. SYDNEY,  
Bishop of Sydney, Chairman of the Meeting.



1896.

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LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

---

LIQUOR TRAFFIC.

(PETITION FROM CERTAIN INHABITANTS OF NEW SOUTH WALES, PRAYING FOR THE EARLY PASSING OF A BILL THAT WILL CONCEDE TO THE ELECTORS, IN EVERY ELECTORATE, FULL LOCAL OPTION WITHOUT COMPENSATION.)

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*Received by the Legislative Assembly, 27 May, 1896.*

---

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned inhabitants of New South Wales,—

HUMBLY SHOWETH:—

That, in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

[*Here follow 45 signatures.*]

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1896.

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LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

---

LIQUOR TRAFFIC.

(PETITION FROM CERTAIN OFFICERS OF ST. JOHN'S DARLINGHURST BRANCH OF THE CHURCH OF ENGLAND TEMPERANCE SOCIETY, IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

—

*Received by the Legislative Assembly, 2 June, 1896.*

---

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned officers of St. John's Darlinghurst branch of the Church of England Temperance Society,—

HUMBLY SHOWETH:—

That, in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

[*Here follow 3 signatures.*]

Similar Petitions were received,—

On 4th June, from residents of the City and Suburbs of Sydney (92 signatures).

„ „ members of the Church of England Temperance Society, Eveleigh-street, Redfern (2 signatures).

„ „ certain inhabitants of New South Wales (17 signatures).

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1896.

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LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

---

LIQUOR TRAFFIC.

(PETITION FROM CERTAIN INHABITANTS OF SYDNEY AND MEMBERS OF ST. PAUL'S, SYDNEY,  
BRANCH OF THE CHURCH OF ENGLAND TEMPERANCE SOCIETY, IN FAVOUR OF FULL LOCAL  
OPTION WITHOUT COMPENSATION.)

---

*Received by the Legislative Assembly, 10 June, 1896.*

---

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned inhabitants of Sydney and members of St. Paul's, Sydney,  
Branch of the Church of England Temperance Society,—

HUMBLY SHOWETH:—

That, in view of the manifold evils through intoxicating drink, which not only include  
drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the  
early passing of a Bill that will concede to the electors themselves, in every electorate, full local option  
without compensation.

And your Petitioners, as in duty bound, will ever pray.

[*Here follow 6 signatures.*]

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1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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LIQUOR TRAFFIC.

(PETITION FROM ALEX. REEKS, CHIEF RULER, "CRYSTAL SPRING TENT, NO. 2," INDEPENDENT ORDER OF RECHABITES, IN THE BALMAIN NORTH CONSTITUENCY, IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

---

*Received by the Legislative Assembly, 30 June, 1896.*

---

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the members of the "Crystal Spring Tent, No. 2," Independent Order of Rechabites, in the Balmain North constituency,—

HUMBLY SHOWETH:—

That in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full Local Option without compensation.

And your Petitioners, as in duty bound, will ever pray.

ALEX. REEKS,  
Chief Ruler.

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Similar Petitions were received,—

- On 30th June, from Alex. Reeks, Chief Ruler, "Crystal Spring Tent, No. 2," Independent Order of Rechabites, in the Balmain South constituency.
- On 30th June, from certain inhabitants of Tumbulgum, Tweed River; 24 signatures.
- On 1st July, from certain inhabitants of Toxteth and The Glebe; 21 signatures.
- On 1st July, from the executive officers of Prince Alfred Division, Sons and Daughters of Temperance, Parramatta; 4 signatures.
- On 1st July, from certain inhabitants of Jones' Island; 24 signatures.
- On 1st July, from certain inhabitants of Berry; 10 signatures.
- On 1st July, from certain inhabitants of Waterloo electorate; 134 signatures.
- On 2nd July, from certain inhabitants of Manly; 50 signatures.
- On 2nd July, from certain inhabitants of Eccleston, Salisbury, and Upper Chichester River; 106 signatures.
- On 2nd July, from certain inhabitants of Waratah, Sons and Daughters of Temperance; 2 signatures.
- On 2nd July, from Alfred Watt, Chief Ruler, and Fred. W. Collins, Secretary, on behalf of the "Captain Cook Tent, No. 1," Independent Order of Rechabites.



1896.

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LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

---

LIQUOR TRAFFIC.

(PETITION FROM CERTAIN INHABITANTS OF THE GLEBE, IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

---

*Received by the Legislative Assembly, 7 July, 1896.*

---

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned inhabitants of the Glebe,—

SHOWETH:—

That in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full Local Option without compensation.

And your Petitioners, as in duty bound, will ever pray.

[*Here follow 120 signatures.*]

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Similar Petitions were received,—

- On 8th July, from certain inhabitants of North Sydney; 54 signatures.
  - On 8th July, from certain inhabitants of Camperdown and The Glebe; 44 signatures.
  - On 8th July, from certain attendants of the Waverley Congregational Church; 31 signatures.
  - On 8th July, from certain inhabitants of Rockdale and Arncliffe; 5 signatures.
  - On 9th July, from certain inhabitants of Hay; 16 signatures.
  - On 9th July, from William Crispin, on behalf of certain members of "Morning Star" Division, Sons and Daughters of Temperance; 4 signatures.
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1896.

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**LEGISLATIVE ASSEMBLY.**  
**NEW SOUTH WALES.**

—  
**LIQUOR TRAFFIC.**

(PETITION FROM CERTAIN INHABITANTS OF GLADSTONE, IN FAVOUR OF FULL LOCAL OPTION  
 WITHOUT COMPENSATION.)

—  
*Received by the Legislative Assembly, 14 July, 1896.*  
 —

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of certain Inhabitants of Gladstone,—

HUMBLY SHOWETH:—

That in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 31 signatures.]

Similar Petitions were received,—

- On 14th July, from certain Inhabitants of Orange; 102 signatures.
- On 14th July, from certain Inhabitants of Murwillumbah and District; 2 signatures.
- On 14th July, from certain Inhabitants of the Municipal District of Mulgoa; 19 signatures.
- On 14th July, from certain Inhabitants of Borenore; 44 signatures.
- On 14th July, from certain Inhabitants of Dubbo; 54 signatures.
- On 14th July, from certain Members of the Emancipation Division of the Sons and Daughters of Temperance, Murwillumbah; 8 signatures.
- On 14th July, from certain Inhabitants of Beechwood; 45 signatures.
- On 15th July, from certain Members of the "Star of Hope" Tent, No. 31, I.O. Rechabites, Waverley; 2 signatures.
- On 15th July, from certain Inhabitants of New South Wales; 23 signatures.
- On 15th July, from certain Sons and Daughters of Temperance and Friends, of Tamworth; 40 signatures.
- On 16th July, from certain Inhabitants of Lithgow; 62 signatures.
- On 16th July, from certain Inhabitants of Temora and District; 20 signatures.
- On 16th July, from certain Inhabitants of Temora and District; 21 signatures.



1896.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

---

**LIQUOR TRAFFIC.**

(PETITION FROM CERTAIN INHABITANTS OF PARKES, IN FAVOUR OF FULL LOCAL OPTION  
WITHOUT COMPENSATION.)

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*Received by the Legislative Assembly, 21 July, 1896.*

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To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of certain Inhabitants of Parkes,—

HUMBLY SHOWETH:—

That in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

*[Here follow 43 signatures.]*

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Similar Petitions were received,—

- On 21st July, from certain Inhabitants of Currajong, near Parkes; 32 signatures.
  - On 21st July, from certain Inhabitants of Flagstone, near Parkes; 16 signatures.
  - On 21st July, from certain Inhabitants of West Wyalong; 109 signatures.
  - On 21st July, from certain Inhabitants of Marulan and surrounding District; 54 signatures.
  - On 22nd July, from certain Residents of Quirindi; 20 signatures.
  - On 22nd July, from certain Residents of Moruya; 22 signatures.
  - On 22nd July, from certain Residents of Spring Ridge and vicinity; 48 signatures.
  - On 23rd July, from certain Inhabitants of West Maitland; 75 signatures.
  - On 23rd July, from certain Inhabitants of New South Wales; 42 signatures.
  - On 23rd July, from certain Inhabitants of New South Wales; 20 signatures.
  - On 23rd July, from certain Inhabitants of West Goulburn; 36 signatures.
-



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

LIQUOR TRAFFIC.

(PETITION FROM CERTAIN MEMBERS OF CARRINGTON TENT, No. 18, I.O. RECHABITES, PARRAMATTA,  
IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

*Received by the Legislative Assembly, 28 July, 1896.*

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned members of the Carrington Tent, No. 18, Independent Order of Rechabites, Parramatta,—

HUMBLY SHOWETH:—

That in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

*[Here follow 18 signatures.]*

Similar Petitions were received,—

- On 28th July, from certain Inhabitants of Leet's Vale and Lower Portland, Hawkesbury River; 29 signatures.
- „ „ from certain Inhabitants of Sackville Reach; 17 signatures.
- „ „ from certain Inhabitants of Maybole, Ben Lomond; 53 signatures.
- „ „ from certain Inhabitants of Yass; 52 signatures.
- „ „ from certain Inhabitants of Young; 33 signatures.
- „ „ from certain Members of the Hope of Petersham Division, No. 87, Sons and Daughters of Temperance; 2 signatures.
- „ „ from certain Inhabitants of Wallsend; 125 signatures.
- On 29th July, from certain Members of the Day Dawn Division, No. 5, Sons and Daughters of Temperance, Newcastle; 2 signatures.
- „ „ from certain Inhabitants of Leichhardt; 86 signatures.
- „ „ from certain Inhabitants of Mulgoa and District; 19 signatures.
- „ „ from certain Inhabitants of Kogarah; 57 signatures.
- „ „ from certain Inhabitants of Drummoyne; 52 signatures.
- „ „ from certain Inhabitants of West Maitland; 76 signatures.
- „ „ from certain Inhabitants of St. Albans and Central McDonald Districts; 44 signatures.
- On 30th July, from certain Inhabitants of Hunter's Hill; 71 signatures.
- „ „ from certain Inhabitants of Murrurundi and District; 35 signatures.
- „ „ from certain Inhabitants of Lower Hawkesbury and surrounding District; 24 signatures.
- „ „ from certain Inhabitants of Oberon; 48 signatures.
- „ „ from certain Inhabitants of Duckmaloi; 21 signatures.
- „ „ from certain Inhabitants of Gannon's Creek, Hastings River; 42 signatures.
- „ „ from Charles E. Wigzell, Chairman of a Public Meeting held at Surry Hills on 28th July, 1896.
- „ „ from certain Inhabitants of Peakhurst; 46 signatures.
- „ „ from certain Inhabitants of Hurstville; 41 signatures.
- „ „ from certain Inhabitants of Gunnedah; 8 signatures.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

**LIQUOR TRAFFIC.**

(PETITION FROM CERTAIN INHABITANTS OF KIMBRIKI, MANNING RIVER, IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

*Received by the Legislative Assembly, 4 August, 1896.*

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned Inhabitants of Kimbriki, Manning River,—

HUMBLY SHOWETH:—

That in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 12 signatures.]

Similar Petitions were received,—

- On 4th August, from William Henson, Chairman of a Public Meeting held at Ashfield on 23rd July, 1896.
- On 5th August, from certain Inhabitants of Rye Park; 54 signatures.
- “ “ from certain Inhabitants of North Sydney and Willoughby; 35 signatures.
- “ “ from certain Inhabitants of North Sydney; 43 signatures.
- “ “ from certain Inhabitants of Mudgee; 62 signatures.
- “ “ from certain Inhabitants of Collingwood and McDonald's Creek; 53 signatures.
- “ “ from certain Inhabitants of Burrundulla and Broombee, in the Mudgee District; 32 signatures.
- “ “ from certain Members of the Baptist Congregation, Balmain; 61 signatures.
- On 6th August, from certain Members of the Morning Star Division, Sons and Daughters of Temperance.
- “ “ from certain Inhabitants of Nanama Creek and Muntoonan; 25 signatures.
- “ “ from certain Inhabitants of Blacktown and Seven Hills; 20 signatures.
- “ “ from certain Members of the Blacktown Branch of the Church of England Temperance Society; 22 signatures.
- “ “ from certain Inhabitants of St. Peters; 137 signatures.
- “ “ from certain Inhabitants of Wollongong; 78 signatures.
- “ “ from certain Inhabitants of Dapto and surrounding District; 49 signatures.
- “ “ from certain Inhabitants of Marshall Mount; 17 signatures.
- “ “ from certain Residents of Muntoonan; 8 signatures.
- “ “ from certain Residents in the Electoral District of Woronora; 32 signatures.
- “ “ from certain Residents in the Electoral District of Wagga Wagga; 66 signatures.
- “ “ from certain Residents in the Electoral District of The Murrumbidgee; 120 signatures.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

LIQUOR TRAFFIC.

(PETITION FROM CERTAIN INHABITANTS OF FROGMOOR AND DISTRICT, IN FAVOUR OF FULL LOCAL  
OPTION WITHOUT COMPENSATION.)

*Received by the Legislative Assembly, 11 August, 1896.*

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of certain Inhabitants of Frogmoor and District,—

HUMBLY SHOWETH:—

That, in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 36 signatures.]

Similar Petitions were received,—

- On 11th August, from certain Members of the Wesleyan Church, William-street, Sydney; 40 signatures.
- „ „ from certain Inhabitants of Glen Innes; 16 signatures.
- „ „ from certain Inhabitants of Camden and surrounding District; 59 signatures.
- On 12th August, from certain Members of the Balmain Congregational Church; 2 signatures.
- „ „ from certain Residents in the Electoral District of The Hume; 77 signatures.
- „ „ from certain Members of the Scots Church, Sydney; 35 signatures.
- „ „ from certain Residents in the Electoral District of Waverley; 88 signatures.
- On 13th August, from certain Members of the Glebe Presbyterian Church; 55 signatures.
- „ „ from certain Members of Randwick Presbyterian Church; 39 signatures.
- „ „ from J. W. Withers, Chairman of a Public Meeting, Parramatta.
- „ „ from certain Inhabitants of Botany; 26 signatures.
- „ „ from certain Inhabitants of Mudgee; 47 signatures.
- „ „ from certain Inhabitants of Wentworth; 28 signatures.
- „ „ from certain Inhabitants of New South Wales; 216 signatures.
- „ „ from certain Inhabitants of Wentworth; 19 signatures.
- „ „ from certain Inhabitants of Wentworth; 19 signatures.
- „ „ from certain Inhabitants of Wentworth; 15 signatures.
- „ „ from certain Members of No. 9 Tent, Independent Order of Rechabites, Paddington.
- „ „ from certain Inhabitants of Kangaroo Valley; 44 signatures.



1896.

## LEGISLATIVE ASSEMBLY.

## NEW SOUTH WALES.

## LIQUOR TRAFFIC.

(PETITION FROM CERTAIN INHABITANTS OF NOWRA, IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

*Received by the Legislative Assembly, 18 August, 1896.*

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned Inhabitants of Nowra,—

HUMBLY SHOWETH:—

That, in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

*[Here follow 55 signatures.]*

Similar Petitions were received,—

- On 18th August, from certain Inhabitants of Cook's Myalls; 13 signatures.  
 " " from certain Inhabitants of Bindogundra, near Parkes; 26 signatures.  
 " " from certain Inhabitants of Bingara; 57 signatures.  
 " " from certain Inhabitants of Newtown; 160 signatures.  
 On 19th August, from certain Inhabitants of Manly and Pittwater; 45 signatures.  
 " " from Thomas Estill, Colonel, Salvation Army.  
 " " from certain Inhabitants of Grafton, Clarence River; 13 signatures.  
 " " from No. 9 Grand Division of the Order of the Sons and Daughters of Temperance, Balmain; 1 signature.  
 " " from certain Residents of Carinda and District; 53 signatures.  
 On 20th August, from certain Inhabitants of Bathurst; 138 signatures.  
 " " from certain Inhabitants of Casino and District; 36 signatures.  
 " " from certain Inhabitants of Helensburgh; 113 signatures.  
 " " from certain Inhabitants of Forest Lodge and other Suburbs; 123 signatures.  
 " " from certain Inhabitants of Queanbeyan; 32 signatures.  
 " " from certain Inhabitants of Lithgow; 77 signatures.  
 " " from certain Inhabitants of Minmi; 273 signatures.  
 " " from certain Inhabitants of Rockdale; 39 signatures.  
 " " from certain Inhabitants of the Manning River District; 39 signatures.  
 " " from certain Inhabitants of Bingara; 55 signatures.  
 " " from certain Inhabitants of Barraba; 107 signatures.  
 " " from certain Inhabitants of Cobargo, Bormagui, Tilba, Murrah, and Wapengo; 33 signatures.  
 " " from certain Residents in the Clarence River District; 74 signatures.  
 " " from certain Inhabitants of Maclean; 26 signatures.  
 " " from certain Inhabitants of Narrandera; 61 signatures.  
 " " from certain Inhabitants of Junee; 59 signatures.  
 " " from certain Inhabitants of Temora; 24 signatures.  
 " " from certain Inhabitants of Young; 90 signatures.  
 " " from certain Inhabitants of Hargraves; 95 signatures.  
 " " from certain Inhabitants of Walcha; 17 signatures.  
 " " from certain Inhabitants of Uralla; 55 signatures.  
 " " from certain Inhabitants of Balmain, Pyrmont, and Annandale; 61 signatures.  
 " " from certain Inhabitants of Albury; 58 signatures.  
 " " from certain Inhabitants of Hay; 11 signatures.  
 " " from certain Inhabitants of Inverell; 54 signatures.  
 " " from certain Inhabitants of Sofala; 10 signatures.  
 " " from certain Inhabitants of New South Wales; 43 signatures.  
 " " from certain Inhabitants of Orange; 38 signatures.  
 " " from certain Inhabitants of Petersham; 83 signatures.  
 " " from certain Inhabitants of Peak Hill; 36 signatures.  
 " " from certain Residents in the Electorate of Sydney—Lang Division; 73 signatures.



1896.

## LEGISLATIVE ASSEMBLY.

## NEW SOUTH WALES.

## LIQUOR TRAFFIC.

(PETITION FROM CERTAIN INHABITANTS OF NOWRA, IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

*Received by the Legislative Assembly, 25 August, 1896.*

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned Inhabitants of Nowra,—

HUMBLY SHOWETH:—

That, in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

*[Here follow 48 signatures.]*

Similar Petitions were received,—

- On 25th August, from certain Inhabitants of Berry and District; 23 signatures.  
 " " from certain Inhabitants of Wallsend; 62 signatures.  
 " " from certain Inhabitants of Coonamble; 33 signatures.  
 " " from certain Inhabitants of Tenterfield; 86 signatures.  
 " " from certain Inhabitants of Summer Hill; 54 signatures.  
 " " from certain Inhabitants of New South Wales; 37 signatures.  
 " " from certain Inhabitants of Goulburn; 45 signatures.  
 " " from certain Inhabitants of North Sydney; 34 signatures.  
 " " from certain Inhabitants of Dulwich Hill; 53 signatures.  
 " " from certain Inhabitants of Marrickville; 35 signatures.  
 " " from certain Inhabitants of Liverpool and District; 44 signatures.  
 " " from certain Inhabitants of Yass; 40 signatures.  
 " " from certain Inhabitants of Quipolly Creek; 16 signatures.  
 " " from certain Inhabitants of Quirindi; 14 signatures.  
 " " from certain Inhabitants of Cowra; 30 signatures.  
 " " from certain Inhabitants of Auburn and Rookwood; 62 signatures.  
 " " from certain Inhabitants of Granville; 42 signatures.  
 " " from certain Inhabitants of Glebeland, near Newcastle; 153 signatures.  
 " " from certain Inhabitants of The Glebe; 55 signatures.  
 " " from certain Inhabitants of Lambton; 453 signatures.  
 " " from certain Inhabitants of St. Peters; 104 signatures.  
 " " from certain Inhabitants of Picton; 78 signatures.  
 " " from certain Inhabitants of Hill End and Tambaroora; 38 signatures.  
 " " from certain Inhabitants of Stockton; 136 signatures.  
 " " from certain Inhabitants of Singleton; 74 signatures.  
 " " from James Matthews, Chairman of a Public Meeting of Residents of Dulwich Hill, held on the 24th August, 1896.
- On 26th August, from certain Inhabitants of Newcastle; 101 signatures.  
 " " from certain Inhabitants of Tighe's Hill, Islington, and Hamilton; 175 signatures.  
 " " from certain Inhabitants of Ryde; 183 signatures.  
 " " from certain Inhabitants of Burwood; 113 signatures.  
 " " from certain Inhabitants of Tumut; 116 signatures.  
 " " from certain Inhabitants of Adelong; 20 signatures.  
 " " from certain Inhabitants of West Maitland; 61 signatures.  
 " " from certain Inhabitants of New South Wales; 438 signatures.  
 " " from certain Inhabitants of Sydney; 69 signatures.  
 " " from certain Inhabitants of Alexandria; 25 signatures.  
 " " from J. W. Hedges, Chairman of a Public Meeting of Residents of Woollahra, held on 17th August, 1896.  
 " " from certain Inhabitants of Pyrmont; 14 signatures.  
 " " from certain Inhabitants of Kiama and District; 24 signatures.
- On 27th August, from certain Inhabitants, Crookwell; 41 signatures.  
 " " from certain Inhabitants of Bowral Electorate; 29 signatures.  
 " " from certain Inhabitants of Moss Vale; 18 signatures.  
 " " from certain Inhabitants of Grafton; 71 signatures.  
 " " from certain Inhabitants of Grafton; 83 signatures.  
 " " from George Toyer, Chairman of a Public Meeting of Residents of Marrickville, held on 25th August, 1896.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

LIQUOR TRAFFIC.

(PETITION FROM CERTAIN INHABITANTS OF MARRICKVILLE, IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

*Received by the Legislative Assembly, 1 September, 1896.*

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned Inhabitants of Marrickville,—

HUMBLY SHOWETH:—

That, in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

*[Here follow 175 signatures.]*

Similar Petitions were received,—

- On 1st September, 1896, from certain Inhabitants of Balmain; 61 signatures.  
 " " " from certain Inhabitants of Balmain and Petersham; 55 signatures.  
 " " " from certain Inhabitants of Sydney and Suburbs; 23 signatures.  
 " " " from certain Inhabitants of Pimlico and German Creek; 47 signatures.  
 " " " from certain Inhabitants of Tamworth; 19 signatures.  
 " " " from certain Inhabitants of Richmond; 151 signatures.  
 " " " from certain Inhabitants of Sutton Forest, Moss Vale, and the neighbourhood; 104 signatures.  
 " " " from certain Inhabitants of Barber's Creek; 4 signatures.  
 On 2nd September, 1896, from certain Inhabitants of Sydney and Suburbs; 20 signatures.  
 " " " from certain Inhabitants of Dungog; 15 signatures.  
 " " " from certain members of the Central Methodist Mission, and others in attendance at the Centenary Hall, Sydney; 763 signatures.  
 " " " from certain Inhabitants of Balmain; 66 signatures.  
 " " " from certain members of the Baptist Congregation in the Electoral District of Goulburn; 39 signatures.  
 " " " from certain members of the Baptist Congregation at Spring Hill, in the Electoral District of Orange; 22 signatures.  
 " " " from certain members of the Baptist Congregation at Orange; 21 signatures.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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LIQUOR TRAFFIC.

(PETITION FROM CERTAIN INHABITANTS OF HARDEN AND MURRUMBURRAH, IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

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*Received by the Legislative Assembly, 8 September, 1896.*

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To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned Inhabitants of Harden and Murrumburrah,—

HUMBLY SHOWETH:—

That, in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 65 signatures.]

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Similar Petitions were received,—

- On 8th September, 1896, from certain Inhabitants of Lismore; 86 signatures.
  - On 9th September, 1896, from certain Inhabitants of Paddington; 68 signatures.
  - “ “ “ from certain Attendants of the Wesleyan Church, Waverley; 48 signatures.
  - On 10th September, 1896, from certain Inhabitants of Kiama; 74 signatures.
  - “ “ “ from certain Inhabitants of Blayney; 22 signatures.
  - “ “ “ from certain Inhabitants of Blayney and Neville; 57 signatures.
  - “ “ “ from certain Inhabitants of New South Wales; 10 signatures.
  - “ “ “ from certain Inhabitants of Blayney; 6 signatures.
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1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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LIQUOR TRAFFIC.

(PETITION FROM CERTAIN INHABITANTS OF PARKES, IN FAVOUR OF FULL LOCAL OPTION  
WITHOUT COMPENSATION.)

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*Received by the Legislative Assembly, 15 September, 1896.*

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To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned Inhabitants of Parkes,—

HUMBLY SHOWETH:—

That, in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

[*Here follow 16 signatures.*]

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Similar Petitions were received,—

On 15th September, 1896, from certain Inhabitants of Mount Victoria; 40 signatures.  
 " " " from William Crispin, Chairman of a Public Meeting of Residents of The  
 Glebe, on the 11th instant.  
 " " " from certain Inhabitants of Willoughby; 16 signatures.  
 " " " from certain Inhabitants of Bowral; 69 signatures.  
 On 16th September, 1896, from certain Inhabitants of Granville.  
 " " " from certain Inhabitants of Paddington and Woollahra; 21 signatures.  
 " " " from certain Members of the Baptist Congregation at Harris-street; 136  
 signatures.

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1896.

LEGISLATIVE ASSEMBLY,  
NEW SOUTH WALES.

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**LIQUOR TRAFFIC.**

(PETITION FROM CERTAIN INHABITANTS OF COOTAMUNDRA AND DISTRICT, IN FAVOUR OF  
FULL LOCAL OPTION WITHOUT COMPENSATION.)

*Received by the Legislative Assembly, 22 September, 1896.*

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To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned Inhabitants of Cootamundra and District,—

HUMBLY SHOWETH:—

That, in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 45 signatures]

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Similar Petitions were received,—

On 23rd September, 1896, from certain inhabitants of Newtown; 37 signatures.  
 " " from certain inhabitants of Newtown; 59 signatures.  
 " " from certain members of the Baptist Congregation at Rooty Hill; 68  
 signatures.

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1896.

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LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

---

LIQUOR TRAFFIC.

(PETITION FROM CERTAIN RESIDENTS OF GUNNING, IN FAVOUR OF FULL LOCAL OPTION  
WITHOUT COMPENSATION.)

---

*Received by the Legislative Assembly, 29 September, 1896.*

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To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned Inhabitants of Gunning,—

HUMBLY SHOWETH:—

That, in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

[*Here follow 15 signatures.*]

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Similar Petitions were received,—

On 29th September, 1896, from certain Inhabitants of Rous Mill; 26 signatures.

On 30th September, 1896, from certain Inhabitants of New South Wales; 309 signatures.

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1896.

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LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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**LIQUOR TRAFFIC.**

(PETITION FROM CERTAIN INHABITANTS OF NEW SOUTH WALES IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

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*Received by the Legislative Assembly, 15 October, 1896.*

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To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned, Inhabitants of New South Wales,—

HUMBLY SHOWETH:—

That in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

*[Here follow 142 signatures.]*

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1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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LIQUOR TRAFFIC.

PETITION FROM CLERGYMEN AND MINISTERS OF EAST SYDNEY IN FAVOUR OF FULL LOCAL  
OPTION WITHOUT COMPENSATION.)

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*Received by the Legislative Assembly, 21 October, 1896.*

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To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the Clergymen and Ministers of East Sydney,—

HUMBLY SHOWETH:—

That in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

*[Here follow 22 signatures.]*

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A. Similar Petition was received,—

On 21st October, 1896, from P. J. Stephen, President, and George Gray, Secretary, in the name of the Executive Committee of the New South Wales Christian Endeavour Union.

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1896.

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LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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**LIQUOR TRAFFIC.**

(PETITION FROM CERTAIN INHABITANTS OF NEW SOUTH WALES, IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

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*Received by the Legislative Assembly, 27 October, 1896.*

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To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned Inhabitants of New South Wales,—

HUMBLY SHOWETH:—

That in view of the manifold evils through intoxicating drink, which not only include drunkenness, but much poverty, immorality, lunacy, and crime, your Petitioners humbly pray for the early passing of a Bill that will concede to the electors themselves, in every electorate, full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

*[Here follow 85 signatures.]*

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A Similar Petition was received,—

On 27th October, from certain Residents of New South Wales; 81 signatures.

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1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

LIQUOR TRAFFIC.

(PETITION FROM JAMES McCALLUM, CHAIRMAN OF A PUBLIC MEETING HELD IN THE PEOPLES HALL, SYDNEY, IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

*Received by the Legislative Assembly, 8 October, 1896.*

To the Honorable the Speaker and the Honorable Members of the Legislative Assembly in Parliament assembled.

The humble Petition of the undersigned,—

RESPECTFULLY SHOWETH:—

That, at a Public Meeting held in the Peoples' Hall, Sussex-street, Sydney, on September 30th, 1896, the following resolution was passed:—

“That, in the opinion of this meeting, the legalised traffic in intoxicating drink is the direct cause of a terrible amount of poverty, vice, and crime, with all the resulting cost and suffering which have to be borne by the people. It therefore affirms the principle that the residents of every electorate should have the power to effectively deal with this demoralising traffic, and this by means of a full Local Option Bill without compensation.”

Your Petitioners therefore humbly pray your Honorable House to take these presents into favourable consideration, and to speedily pass such a Bill into law.

And your Petitioners, as in duty bound, will ever pray.

JAS. McCALLUM,  
Chairman of the Public Meeting.



1896.

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LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

---

LIQUOR TRAFFIC.

(PETITION FROM CERTAIN MEMBERS OF THE BAPTIST CONGREGATION AT BURTON-STREET CHURCH, IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

---

*Received by the Legislative Assembly, 27 October, 1896.*

---

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned Members of the Baptist Congregation at Burton-street Church, in the Electoral District of Bligh,—

HUMBLY SHOWETH:—

That, seeing the liquor traffic assumedly exists for the convenience of the people, and that the people have to bear the loss and suffering resulting therefrom, your Petitioners think that the people should have the legal power of effectively dealing therewith.

Your Petitioners therefore pray your Honorable House to pass, this Session, a Bill embodying the principle of full local option without compensation.

And your Petitioners, as in duty bound, will ever pray.

*[Here follow 36 signatures.]*

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1896.

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LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

---

**LIQUOR TRAFFIC.**

(PETITION FROM CERTAIN RESIDENTS IN THE DISTRICT OF LIVERPOOL, IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

---

*Received by the Legislative Assembly, 18 June, 1896.*

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To the Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned, being residents in the District of Liverpool,—

HUMBLY SHOWETH:—

That, in the opinion of your Petitioners, a Bill embodying the principle of full local option without compensation is urgently needed for dealing with the liquor traffic in this Colony.

That your Petitioners, therefore, pray that you will, during the Session of 1896, be pleased to pass a Bill embodying this principle.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 205 signatures.]

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1896.

LEGISLATIVE ASSEMBLY,  
NEW SOUTH WALES.

LIQUOR TRAFFIC.

(PETITION FROM CERTAIN RESIDENTS IN THE WOOLLAHRA ELECTORATE IN FAVOUR OF FULL LOCAL OPTION WITHOUT COMPENSATION.)

*Received by the Legislative Assembly, 28 July, 1896.*

To the Members of the Legislative Assembly, in Parliament assembled.

The Petition of the undersigned, being Residents in the Electoral District of Woollahra,—

HUMBLY SHOWETH:—

That in the opinion of your Petitioners a Bill embodying the principle of full local option without compensation is urgently needed for dealing with the liquor traffic in this Colony.

That your Petitioners therefore pray that you will during the Session of 1896 be pleased to pass a Bill embodying this principle.

And your Petitioners, as in duty bound, will ever pray.

*[Here follow 214 signatures.]*

A similar Petition was received on 28th July, from certain Members of St. John's Presbyterian Church, Paddington, 45 signatures.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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LIQUOR TRAFFIC.

(PETITION FROM JOHN KENT, CHAIRMAN OF A MEETING OF THE UNITED CHRISTIAN CHURCHES IN THE PROTESTANT HALL, SYDNEY, IN FAVOUR OF LOCAL OPTION WITHOUT COMPENSATION.)

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*Received by the Legislative Assembly, 23 July, 1896.*

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To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the United Christian Churches of New South Wales, represented by at least 500 adherents, assembled in the Protestant Hall, Sydney, July 20th, 1896,—

HUMBLY SHOWETH:—

That, in consequence of the numerous and serious evils connected with the sale of intoxicating liquors, this meeting is of opinion that a Bill should be passed by the Parliament conceding to the electors in every constituency full local option.

That it is the opinion of this meeting that a demand for compensation, made chiefly on behalf of the brewers, for the non-renewal of a yearly permit to sell liquor, is unreasonable, and should not be permitted to block the progress of reform.

That, inasmuch as the four successive previous Parliaments have affirmed the principle of full option, this meeting, believing the present House to be also favourable, is of opinion that any further delay in passing a Bill would be unjustifiable and contrary to the best interests of the people, and therefore pray that your Honorable House may speedily pass the Bill into law.

And your Petitioners, as in duty bound, will ever pray.

JOHN KENT,  
Chairman of the meeting held July 20th, 1896



1896.

## LEGISLATIVE ASSEMBLY.

## NEW SOUTH WALES.

## LIQUOR TRAFFIC.

(PETITION FROM CERTAIN RESIDENTS OF JUNEE AND DISTRICT REPRESENTING THAT NO SYSTEM OF LOCAL OPTION CAN BE COMPLETE WITHOUT COMPENSATION FOR THE CONFISCATION OF LICENSES.)

*Received by the Legislative Assembly, 7 July, 1896.*

To the Honorable the Speaker and the Honorable Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the residents of Junee and District,—

SHOWETH:—

That, in the opinion of your Petitioners, no system of local option can be complete or equitable without the incorporation of a well-defined plan of compensation for the confiscation of licenses. Your Petitioners, therefore, pray your Honorable House to take the foregoing into serious consideration, with the view to the incorporation of a plan of compensation, as aforesaid, in any Bill which may be introduced for the purpose of extending the existing system of local option.

And your Petitioners, as in duty bound, will ever pray.

*[Here follow 177 signatures.]*

Similar Petitions were received,—

- On 7th July, from certain residents of Yass and District; 25 signatures
- On 7th July, from certain residents of Goulburn and District; 58 signatures.
- On 7th July, from certain residents of Wagga Wagga and District; 76 signatures.
- On 7th July, from certain residents of Bourke and District; 20 signatures.
- On 7th July, from certain residents of Katoomba and District; 68 signatures.
- On 8th July, from certain residents of Hillgrove and District; 88 signatures.
- On 8th July, from certain residents of Sutherland and District; 23 signatures.
- On 8th July, from certain residents of Nyngan and District; 36 signatures.
- On 8th July, from certain residents of Narrabri and District; 72 signatures.
- On 8th July, from certain residents of Gundagai and District; 21 signatures.
- On 8th July, from certain residents of Bingara and District; 17 signatures.
- On 8th July, from certain residents of Harden and District; 45 signatures.
- On 8th July, from certain residents of Coonamble and District; 49 signatures.
- On 8th July, from certain residents of Mudgee and District; 173 signatures.
- On 8th July, from certain residents of Wellington and District; 56 signatures.
- On 8th July, from certain residents of Parkes and District; 209 signatures.
- On 8th July, from certain residents of Nevertire and District; 49 signatures.
- On 8th July, from certain residents of Merrindee and District; 26 signatures.
- On 8th July, from certain residents of Forbes and District; 87 signatures.
- On 8th July, from certain residents of Temora and District; 21 signatures.
- On 8th July, from certain residents of Warren and District; 71 signatures.
- On 8th July, from certain residents of Lincoln and District; 21 signatures.
- On 8th July, from certain residents of Uralla and District; 33 signatures.
- On 8th July, from certain residents of Singleton and District; 47 signatures.
- On 8th July, from certain residents of Morpeth and District; 31 signatures.
- On 9th July, from certain residents of Tamworth and District; 43 signatures.
- On 9th July, from certain residents of Inverell and District; 25 signatures.
- On 9th July, from certain residents of Kelso and District; 30 signatures.
- On 9th July, from certain residents of Orange and District; 185 signatures.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

LIQUOR TRAFFIC.

(PETITION FROM CERTAIN RESIDENTS OF KIAMA AND DISTRICT REPRESENTING THAT NO SYSTEM OF LOCAL OPTION CAN BE COMPLETE WITHOUT COMPENSATION FOR THE CONFISCATION OF LICENSES.)

*Received by the Legislative Assembly, 14 July, 1896.*

To the Honorable the Speaker and the Honorable Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the Residents of Kiama and District,—

SHOWETH:—

That, in the opinion of your Petitioners, no system of local option can be complete or equitable without the incorporation of a well-defined plan of compensation for the confiscation of licenses. Your Petitioners therefore pray your Honorable House to take the foregoing into serious consideration, with a view to the incorporation of a plan of compensation, as aforesaid, in any Bill which may be introduced for the purpose of extending the existing system of local option.

And your Petitioners, as in duty bound, will ever pray.

[*Here follow 61 signatures.*]

Similar Petitions were received,—

On 14th July, from certain Residents of Bulli and District; 94 signatures.

On 16th July, from certain Residents of Wingen and District; 20 signatures.

On 16th July, from certain Residents of Muswellbrook and District; 25 signatures.

On 16th July, from certain Residents of Scone and District; 42 signatures.

On 16th July, from the United Licensed Victuallers' Association of New South Wales; 18 signatures.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

## HARBOUR AND RIVER IMPROVEMENT WORKS.

(RETURN RESPECTING MONEY VOTED FOR.)

*Printed under No. 24 Report from Printing Committee, 29 October, 1896.*

[Laid upon the Table of the House in answer to Question No. 2 of 5 December, 1895.]

### Question.

(2.) MONEY VOTED FOR HARBOUR IMPROVEMENT WORKS:—MR. ARCHIBALD CAMPBELL asked THE COLONIAL TREASURER,—

The total amount of money recently voted by this House on the Estimates, including Loan Estimates, for harbour and river improvement works on the coast northward of Sydney, specifying the respective sums making up such total and the different works for which they were voted?

The amount voted on the same Estimates for similar works on the coast southward of Sydney, with like particulars in every respect?

### Answer.

RETURN showing the total amount of money recently voted on the Estimates, including Loan Estimates, for Harbour and River Improvement Works on the coast northward and southward of Sydney.

#### NORTHWARD OF SYDNEY.

##### *Loan Votes.*

Richmond River improvements ... ..	£50,000
Nambucca " " ... ..	5,000
Bellinger " " ... ..	5,000
Tweed " " ... ..	6,600
Towards harbour works, and improved shipping facilities, Port of Newcastle ... ..	140,000
Trial Bay harbour improvements ... ..	12,000
Towards improving entrance to Camden Haven ... ..	5,000
Towards straightening course of Styx and Throsby Creeks, to facilitate the discharge of flood waters ... ..	9,000
New lighter for Newcastle Harbour ... ..	1,500
Improvements to entrance, Cape Hawke... ..	1,000
Rock, Richmond River ... ..	1,500
	£236,600

##### *Revenue Votes.*

Improving Richmond River and tributaries ... ..	2,000
Snagging tributaries of Tweed River ... ..	300
Maintenance, Newcastle harbour works ... ..	5,000
Removal of rocks, South Arm, Clarence River ... ..	600
Wharf at Tea Gardens, Myall River ... ..	200
Wharf at Wauchope, Hastings River ... ..	300
	8,400
	£245,000

#### SOUTHWARD OF SYDNEY.

##### *Loan Votes.*

New steam ferry punt, George's River ... ..	3,800
---	-------

RETURN showing the expenditure on Harbours of the coast north and south of Sydney, New South Wales, from 1855 to 1895, inclusive.

## NORTH OF SYDNEY.

	£	s.	d.
Tweed River ... ..	38,670	16	2
Brunswick River ... ..	1,147	12	3
Richmond River ... ..	206,832	5	6
Clarence River ... ..	347,088	16	10
Bellinger River ... ..	24,857	6	7
Coff's Harbour ... ..	13,521	17	2
Woolgoolga Bay ... ..	13,848	10	8
Nambucca River ... ..	8,273	1	6
Macleay River (Trial Bay) ... ..	143,257	4	11
Port Macquarie ... ..	3,367	13	8
Manning River ... ..	15,710	11	4
Camden Haven ... ..	3,061	5	1
Cape Hawke ... ..	4,226	2	11
Byron Bay ... ..	17,573	13	10
Port Stephens ... ..	1,116	10	7
Newcastle ... ..	1,101,310	13	8
Lake Macquarie ... ..	137,149	3	4
	<hr/>		
	£2,081,013	6	0

## SOUTH OF SYDNEY.

Shellharbour ... ..	15,632	11	0
Port Hacking ... ..	1,455	14	5
Wollongong ... ..	116,090	9	5
Kiama ... ..	92,588	6	11
Shoalhaven River ... ..	981	5	0
Jervis Bay ... ..	3,757	18	3
Ulladulla ... ..	18,588	0	10
Bateman's Bay ... ..	1,559	12	5
Moruya ... ..	73,833	8	1
Bega ... ..	5,557	7	7
Gerringong ... ..	1,880	12	6
Wagonga River ... ..	583	13	6
Eden ... ..	8,815	12	11
	<hr/>		
	340,874	17	10
	<hr/>		
	£2,421,888	3	10

NOTE.—These figures do not include the port of Sydney, or the cost of dredging works other than those connected with the immediate entrances to the rivers, except in the case of Newcastle, where the cost of harbour dredging is included.

1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

PARLIAMENTARY STANDING COMMITTEE ON  
PUBLIC WORKS.

REPORT

TOGETHER WITH

MINUTES OF EVIDENCE, APPENDICES, AND PLANS,

RELATING TO THE

PROPOSED IMPROVEMENT OF COOK'S  
RIVER.

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Presented to Parliament in accordance with the provisions of the Public Works Act,  
51 Vic. No. 37.

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*Printed under No. 12 Report from Printing Committee, 6 August, 1896.*

SYDNEY: CHARLES POTTER, GOVERNMENT PRINTER.



## MEMBERS OF THE COMMITTEE.

## LEGISLATIVE COUNCIL.

The Honorable FREDERICK THOMAS HUMPHRY, Vice-Chairman  
 The Honorable JAMES HOSKINS.  
 The Honorable CHARLES JAMES ROBERTS, C.M.G.  
 The Honorable WILLIAM JOSEPH TRICKETT.  
 The Honorable DANIEL O'CONNOR.

## LEGISLATIVE ASSEMBLY.

THOMAS THOMSON EWING, Esquire, Chairman.  
 HENRY CLARKE, Esquire.  
 CHARLES ALFRED LEE, Esquire.  
 JOHN LIONEL FEGAN, Esquire.  
 THOMAS HENRY HASSALI, Esquire.  
 GEORGE BLACK, Esquire.  
 FRANCIS AUGUSTUS WRIGHT, Esquire.  
 FRANK FARNELL, Esquire.

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

IMPROVEMENT OF COOK'S RIVER.

REPORT.

THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS, appointed during the first Session of the present Parliament, under the Public Works Act of 1888, 51 Vic. No. 37, the Public Works Act Amendment Act of 1889, 52 Vic. No. 26, and the Public Works (Committees' Remuneration) Act of 1889, 53 Vic. No. 11, to whom was referred the duty of considering and reporting upon "the expediency of carrying out certain works for the Improvement of Cook's River, near Tempe, with the object of providing for the better discharge of flood-waters," have, after due inquiry, resolved that it is not expedient the proposed improvement of Cook's River, at a cost of £36,400, as referred to the Committee by the Legislative Assembly, nor the alternative Departmental scheme, at a cost of £25,000, be carried out; but they recommend that a portion of such work be undertaken by the Government, viz.:—(1) Lowering the sills at the southern end of Cook's River Dam and extending the sluice-gates to the necessary width; (2) Dredging Cook's River and Wolli Creek; (3) Constructing an embankment, with proper escape for storm-waters, across the entrance to Marrickville Creek. The total cost not to exceed £15,000. The storm-water channel down the centre of Marrickville Creek should be carried out under the provisions of the Metropolitan Water and Sewerage Act Extension Act of 1894;—and, in accordance with the provision of subsection (iv), of clause 13, of the Public Works Act, report their resolution to the Legislative Assembly:—

1. The question of improving Cook's River and dealing with the flood-waters and the low-lying lands in its vicinity has engaged much attention for some years past. The necessity for action has been admitted, but there has been a difference of opinion as to the best means for dealing effectively with the insanitary condition of the river and the flats adjacent thereto. Property-owners on the low-lying portions of Marrickville have urged the adoption of remedial measures, on the ground that "their properties were submerged during every rainstorm with upland water which, owing to defective outlets, remained on this land a considerable time, ultimately, when drying off, leaving a deposit of sewage matter which became offensive and prejudicial to the health of the inhabitants." About 100 acres of the land are below high-water mark, and this accentuates the difficulty of dealing with the question. Complaints have been numerous from residents in the neighbourhood of Cook's River and Wolli Creek, who assert the district is becoming unhealthy from the foul state of those water-courses.

Departmental statement.

2. The original scheme proposed by the Department contemplated the removal of 300 feet of the Cook's River dam and the construction of a bridge across the opening; also the building of a dam having low and ample sluice-gates across the Marrickville drainage outlet, the top being high enough to prevent floods passing

Outline of the original scheme.

passing down Cook's River from entering upon the low lands. Concrete overshot dams were to be constructed across Cook's River, near Undercliffe Bridge, and across Wolli Creek, a short distance up from its junction with Cook's River. In addition, fascine banks or training walls were to be formed for the purpose of preventing tidal and flood-waters from submerging some low-lying lands. It was also intended to resume certain river frontages near Tempe, and to make reclamations in front.

Estimated cost of the original Departmental scheme.

3. The estimated cost—£36,400—of the original Departmental scheme is made up as follows:—

Removing Cook's River Dam, altering level of portion of road, remaking same, and providing side fences	£800
New timber bridge, 300 feet long and 40 feet wide	5,500
Temporary bridge, required during progress of works	1,600
Training-walls and fascine banks on both sides	10,200
Dam and sluices across Marrickville flats	4,300
Dam and sluices across Cook's River at Undercliffe	3,100
Dam and sluices across Wolli Creek	2,600
Dredging full width of channel 5 feet deep up Cook's River to Undercliffe and up to Wolli Creek Dam	5,000
Contingencies (say)	3,300
Total	£36,400

The original Departmental scheme—its objects.

4. The objects to be gained by the proposed work were stated to be:—(1) To keep the Cook's River waters wholly out of Marrickville. (2) To allow the flood-waters to pass freely down and escape far more rapidly than is possible under existing conditions. (3) To lower the low-water level of Cook's River above the present dam by fully 2 feet, and thus provide a better escape for the drainage.

Alternative scheme—Departmental.

5. The Engineer-in-Chief for Public Works states that much of the flooding of the low lands in the past has been due not so much to the rainfall on the Marrickville basin as to the flood-waters of Cook's River entering and passing up the Marrickville Valley; an alternative proposal was therefore submitted by the Department providing an outlet for the Marrickville surface drainage less under the influence of the Cook's River floods. This, it was said, could be done by constructing an outlet partly by open channel, then by tunnel, and again by open channel, starting from the centre of the valley a little below the Marrickville to Burwood Road railway junction, under the Cook's River Road, near the Bay View Asylum, to the junction of Shea's Creek with Cook's River. The invert would be at about the level of low-water mark spring tides, the fall 1 in 3,200 feet, and the dimensions of the tunnel would be 15 feet by 6 feet. It would be necessary to construct self-acting sluice-gates to keep out tidal water and allow flood-water to escape during falling tides. From the outlet of the tunnel to Shea's Creek would be an open canal 50 feet wide and 2 feet deep at low water.

Estimated cost of alternative Departmental scheme.

6. The estimated cost of the alternative proposal was stated to be £25,000, and included the following items:—

Tunnel and drain to Shea's Creek, with flood-gates, &c, complete	£15,000
Dam across Marrickville valley	2,000
Dredging in Cook's River and Wolli Creek	4,000
Lowering sills, Cook's River dam	2,000
Contingencies (say)	2,000
Total	£25,000

Land resumption.

7. No estimate was placed before the Committee regarding the probable cost of land resumption; it was stated the amount required would not be heavy.

The Committee's inquiry.

8. The Committee have, by visiting the site of the proposed improvements and examining those qualified to give evidence in relation thereto, made themselves thoroughly acquainted with every feature of the scheme. A large number of witnesses have been examined. These include Mr. C. W. Darley, Engineer-in-Chief for Public Works; Dr. J. Ashburton Thompson, Chief Medical Inspector to the Board of Health; Mr. J. M. Smail, Engineer-in-Chief, Metropolitan Board of Water Supply and Sewerage; Mr. R. W. W. McCoy, Mayor of Marrickville; Aldermen W. R. Benson and G. A. Morehouse, Marrickville; Mr. C. Moyes, Marrickville; Mr. J. P. Webster, Borough Engineer, Marrickville; Mr. E. Campbell, M.A., solicitor, Richmond; Mr. T. Stanley, Marrickville; Mr. J. P. Sharkey, civil and

and hydraulic engineer; Mr. F. Gannon, solicitor; Dr. A. E. Perkins, Marrickville; Mr. S. R. Lorking, Mayor of Canterbury; Aldermen J. Denniss, J. Quigg, and J. McBean, Canterbury; Mr. J. Wren, Canterbury; Mr. F. Davis, Canterbury; Miss M. L. Campbell, Wanstead, near Tempe; Mr. J. P. Josephson, civil and consulting engineer; Mr. J. H. Clayton, Mayor of Rockdale; Aldermen W. G. Judd, E. Godfrey, H. Cooke, and J. Curtis, Rockdale; Mr. J. Bowmer, Rockdale; Mr. J. Goode, Rockdale; Mr. D'A. H. Bucknell, Tempe; and Messrs. J. W. Watkin and Benjamin Lee, Directors of the Sydney Permanent Freehold Land and Building Co., Limited.

9. Description of the various watersheds which discharge at the Cook's River Dam :—

Various watersheds discharging at Cook's River Dam.

Cook's River, immediately above the dam, receives the water of Wollie Creek from the south, and that from the valley of Marrickville Flat on the north. The main river continues its westerly trend.

The watershed of Wollie Creek is about 5,000 acres in extent. This creek is the storm-water discharge for portions of the municipalities of Rockdale, Canterbury, Kogarah, and Hurstville.

The area of the watershed draining into Marrickville Creek is about 1,700 acres. This valley forms the storm-water discharge for portions of the municipalities of St. Peter's, Newtown, Petersham, and Marrickville.

The catchment area of Cook's River above the dam, not including the area described, is about 8,000 acres; this part of Cook's River receives the storm-water from portions of the municipalities of Enfield, Ashfield, Marrickville, and Canterbury. Thus Cook's River at the dam is the outlet for storm-water from an area of about 14,700 acres.

Portions of these areas carry dense populations, and since a sewerage system is not complete, nor likely to be for years to come, it is apparent that a quantity of objectionable matter must be borne by the storm-waters to Cook's River, and, if intercepted, must gradually create a nuisance which will become intolerable.

10. Evidence has been given as to the insanitary condition of Cook's River above the dam, and of Marrickville Flat. These localities are doubtless a menace to public health, and with the increase of population the nuisance will, unless immediate steps be taken, certainly be augmented.

Insanitary state of Marrickville Flat, &c.

11. Having decided that Cook's River, near Tempe, and Marrickville Flat are in an insanitary condition, the matters requiring special consideration are :—

Matters for special consideration.

- (1) How far the cost of the necessary improvements should be made a State obligation?
- (2) What proportion of the cost the municipalities occupying the watershed should be called upon to defray?
- (3) The wisest method of abating the nuisances.

12. The powers of the various municipalities adjacent to Cook's River are limited by the banks of the river, which in its lower reaches form their boundaries.

State obligation.

Cook's River being a tidal water over which the State holds control, any expenditure on its channel not only would be an illegal outlay of municipal funds, but would not be permitted by the State unless under Departmental supervision. The cost of such works could only be defrayed from a fund levied upon the various areas, which fund the municipalities are not legally entitled to create. Further, if there has been any interference with the interest of these municipalities by the erection of works by the State which have increased any nuisance adjacent to the municipal boundaries, on areas under State control, it is the duty of the State to remedy the evil as far as possible.

13. The Committee are of opinion :—

- (1) That the lower reaches of Cook's River, being naturally tidal waters, are under State control.
- (2) That the existence of the dam, with a sluicing discharge less than the natural discharging area of the river impedes the ready escape of the storm-waters.

Views of the Committee—  
Cook's River under State control ;  
State responsibility, &c., &c.

(3)

- (3) That the railway embankment may have somewhat contracted the original discharging area of the river, the current from Wollie Creek being thereby forced from its original bed and thrust further north into a less direct and shallower channel.

The erection of the dam, with inferior sluicing power, and the construction of the Illawarra Railway embankment, may have prejudicially affected the discharge of Cook's River, and probably have been the means (a) of augmenting the floods which periodically visit the lower country; (b) of increasing the tendency for objectionable matter to deposit near Tempe.

The Committee are, therefore, of opinion that there is a certain amount of State responsibility with regard to the present insanitary condition of Cook's River, and it should be discharged by the carrying out of dredging operations, to provide a channel in the lower reaches of Wollie Creek and Cook's River, sufficient to furnish a reasonable outlet for these waters, and by providing sufficiently large sluice-gates in the dam to deal with such discharge.

Submergence  
of Marrick-  
ville Valley.

14. Marrickville Valley is liable to submergence either from the rain falling upon its own catchment area or by the overflow from the flood-waters from Cook's River. In the valley 109 acres 2 roods and 37 perches are at an elevation of not more than high-water mark, of which 48 acres are 1 foot, 14 acres 2 feet, and  $1\frac{1}{2}$  acre 3 feet under high-water mark. It is therefore clear that no gravitation scheme for draining this flat can more than alleviate the floods which occur. The only method by which flood-waters could be thoroughly dealt with would be by the construction of a bank across the entrance of the valley to keep out the overflow from Cook's River, and the erection of a powerful pumping plant capable of dealing promptly with a portion of the waters which reach the Marrickville flat from its own catchment area; and by intercepting some of the waters on either side of the valley at a sufficient elevation to admit of their discharge into Cook's River above flood-level. But the importance of the interests involved does not justify at present the necessarily heavy expenditure.

Treatment of  
flood-waters  
in Marrick-  
ville Valley.

15. The Committee recommend that a bank be erected across the entrance to Marrickville Valley, and that a storm-water channel be constructed down the drainage centre, discharging through the bank by a sluice-gate which can be closed when the flood in Cook's River is higher than in Marrickville Valley. This channel must be sufficiently wide to drain the flat in ordinary weather and to provide for the speedy clearing of the lower lands as the flood-level in the river falls. The work should be carried out in accordance with the terms and conditions which obtain in other works of the kind. The storm-waters which flood Marrickville Valley are collected over a water-shed of 1,700 acres, embracing various municipalities, and this work should be a joint charge upon them. The annual cost will be very small indeed, and should be defrayed in a manner similar to that obtaining in the case of storm-water discharges constructed in the interest of other municipalities.

Scheme, as  
submitted to  
the Com-  
mittee.

16. The scheme, as submitted to the Committee, contemplated an expenditure of £36,400, and embraced items for the erection of dams on Cook's River, near Undercliffe Bridge, and on Wollie Creek, and the erection of fascine banks practically from the dam to these places, which would be rendered necessary by the inflow of salt water consequent upon the proposed removal of the dam. If the contention be correct that the present dam has aided in creating the nuisance at Tempe, as the population increases it is clear that the evil would simply be transferred a short distance up each creek to the proposed new dam sites. If it be contended that such dams can be erected without creating an insanitary state of things, the sluice-gates at the present dam can be so constructed. The erection of the fascine banks in front of private properties may lead to litigation.

Alternative  
Scheme sub-  
mitted to the  
Committee.

17. The alternative scheme, at a cost of £25,000, has two salient defects—
- (1) The lowering of the sills of the present gates at the Tempe Dam will not furnish a sufficient discharge for the flood waters of Cook's River.
  - (2) A storm-water discharge from an area of 1,700 acres, through a tunnel of 15 feet by 6 feet, with a fall of 1 foot in 3,200 feet, and an intermittent discharge controlled by both tide and flood, will be ineffective. The flood-waters awaiting discharge will submerge the lower lands and hang there until they creep slowly through the intermittently discharging tunnel.

The

The velocity of the water in the tunnel would be not more than  $1\frac{3}{4}$  miles per hour; there would therefore certainly be a deposit from storm-water (which would be aggravated by the fact that when the tide was up, the water would lie dead in the tunnel), unless it were intercepted at the intake, which would necessarily be a difficult operation.

18. Many witnesses, amongst whom were several municipal representatives, were of opinion that the removal of the dam at Cook's River, and the consequent ebb and flow of the tide, would be the best means of purifying both Cook's River and Wolli Creek, but they do not appear to have considered the damage that would thereby be caused by the submergence with salt water of the low-lying lands. Owners of land so situated gave evidence that they would suffer great loss, and the Department recognise the possible claims for damage that might arise if salt water were let into the river. Proposal to remove Cook's River Dam.

19. The Committee recommend the following works should be undertaken by the State:— Works to be undertaken by the State.

- (1) Lowering the sills at the southern end of Cook's River Dam, and extending the sluice-gates to a width of not less than 200 feet.
- (2) Dredging Cook's River and Wolli Creek.
- (3) Constructing an embankment (with proper escape for storm-water) across the entrance to Marrickville Creek.

The present sluice-gates at the northern end of the dam to be left for flood discharge.

20. The necessary outlay in connection with the storm-water channel should be a charge on the municipalities on the catchment area of Marrickville Creek. Cost of storm-water discharge to be borne by municipalities.

21. The Committee are of opinion that these proposals will deal with the nuisance in Cook's River satisfactorily, mitigate the floods in the Marrickville Valley, and much improve its sanitary condition. It will be understood that the certain increase of settlement on the watershed of Cook's River and Wolli Creek will create further pollution, but if these waterways continue to be the flood-water discharge of the municipalities particularised they should be treated as such, and the municipalities rated to construct and maintain them for that purpose. Marrickville Valley can only be kept free from floods by a pumping and intercepting scheme, and the interests involved therein are limited to the localities and municipalities from which the flood-waters are collected. Effect of Committee's proposals.

22. In carrying out any works the result of which will only alleviate insanitary conditions, care should be exercised that the temporary measures, as far as possible, should form part eventually of a complete scheme. It is clear that were the dams erected in Cook's River and Wolli Creek, as proposed by the Department, their removal would be the first step necessary in a thorough scheme to deal with the localities on these drainage areas, and therefore the expenditure of nearly £6,000,—to which must be added the cost of such removal—would have been expended on doubtful work of a purely temporary character. In the future, as interests become sufficiently great to justify the total prevention of floods in Marrickville Valley, a pumping scheme will be necessary, and then the flood-water discharge channel, recommended by the Committee down the drainage centre, will form a portion of the permanent work necessary to attain that object. It will be well, when constructing this storm-water channel, to extend it beyond the proposed intake of the alternative scheme, to intercept the flood-waters further up Marrickville Valley. Temporary works should form part of permanent scheme.

23. The following extract from the Minutes of Proceedings of 22nd July, 1896, shows the resolution arrived at by the Committee:— Resolution of the Committee.

Mr. C. J. Roberts moved—

"That the Committee are of opinion it is not expedient the proposed Improvement of Cook's River, at a cost of £36,400, as referred to the Committee by the Legislative Assembly, nor the alternative Departmental scheme, at a cost of £25,000, be carried out; but they recommend that a portion of such work be undertaken by the Government, viz.:—

- (1) Lowering the sills at the southern end of Cook's River Dam and extending the sluice-gates to the necessary width;
- (2) Dredging Cook's River and Wolli Creek;
- (3) Constructing an

an embankment (with proper escape for storm-waters) across the entrance to Marrickville Creek. The total cost not to exceed £15,000. The storm-water channel down the centre of Marrickville Creek should be carried out in accordance with the provisions of the Metropolitan Water and Sewerage Act Extension Act of 1894."

Mr. Fegan seconded the motion.

Mr. Hassall moved,—

"That the motion be amended by the omission of all the words after the words 'Wolli Creek.'"

The amendment was seconded by Mr. Wright, and negatived on the following division, upon the question, "That the words proposed to be omitted stand part of the motion":—

Ayes, 6.		Noes, 2.
Mr. Ewing,		Mr. Hassall,
Mr. Humphery,		Mr. Wright.
Mr. Roberts,		
Mr. Clarke,		
Mr. Lee.		
Mr. Fegan.		

The motion was then passed on the following division:—

Ayes, 6.		Noes, 2.
Mr. Ewing,		Mr. Hassall,
Mr. Humphery,		Mr. Wright.
Mr. Roberts,		
Mr. Clarke,		
Mr. Lee,		
Mr. Fegan.		

THOS. EWING,  
Chairman.

Office of the Parliamentary Standing Committee on Public Works,  
Sydney, 24 July, 1896.

# PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

## MINUTES OF EVIDENCE.

### IMPROVEMENT OF COOK'S RIVER.

TUESDAY, 16 JUNE, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. CHARLES JAMES ROBERTS, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.

JOHN LIONEL FEGAN, Esq.

THOMAS HENRY HASSALL, Esq.

GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee proceeded to consider the proposed Improvement of Cook's River.

Cecil West Darley, Esq., Engineer-in-Chief for Public Works, Department of Public Works, sworn, and examined:—

1. *Chairman.*] Has the scheme before the Committee been prepared under your supervision? It has. C. W. Darley, Esq.
2. Have you a Departmental statement to make in respect of it? Yes; it is as follows:—This matter has occupied the attention of many engineers during the last ten or eleven years, and while all seem to admit the necessity for something being done, there has been some diversity of opinion as to the remedy. On main points, however, all agree, also, that to do anything effectively, the work must involve a considerable expenditure. For many years the call for some remedial measures came from property-owners on the low-lying portions of Marrickville, the complaints being that their property was submerged during every rain-storm with upland water, which, owing to defective outlets, remained on this land a considerable time; ultimately, when drying off, leaving a deposit of sewage matter over their land which became offensive, and prejudicial to the health of the inhabitants. That this was not without grounds for complaint, may be realised from the fact that over 100 acres of the land is below high-water mark, and this at once points to the difficulty of dealing with the whole question. Of late, the complaints have been more numerous from residents in the neighbourhood of Cook's River and Wollie Creek, who state that the district is becoming unhealthy from the foul state of those water-courses. This is no doubt largely due to the long continuance of dry weather, and the absence of rainfall to scour out the channels; there is no doubt but that the evil is intensified also from the addition of drainage matter from suburbs surrounding Marrickville flats. For the information of the Committee, I hand in the following papers:—
1. A *précis* of the papers on this subject from 1885 to date, and the following reports in full, which show some of the schemes proposed for dealing with the matter, also an early history of Cook's River Dam, collected from old records.
2. Dr. Ashburton Thompson's report on the sanitary condition of creek through Marrickville Valley.
3. Report by Mr. Stayton on drainage of Marrickville Valley.
4. " Mr. Price " "
5. " Mr. Bagge " "
6. " Mr. Hickson " "
7. " Mr. Williams " "
8. " Mr. Darley " "
9. " "Digna Sequamur" "
10. Report of Mr. Price on last proposal.
- 16 June, 1896.

THE main difficulty in the way of proper drainage of this district is the obstruction offered by the causeway carrying Cook's River Road across the river, known as Cook's River Dam. This dam was constructed in the early days of the Colony—as nearly as I can ascertain it was erected in 1839-41 by prison gangs during Sir George Gipps' governorship, the object being to shut out salt water from the low-lying land, and retain fresh water up the creeks for various business purposes; sluice-gates were provided at the same time for passing out the river water, but these were evidently found insufficient, for between the years 1861 and 1876 several sums were voted and expended in providing a greater number of sluices, and enlarging those originally constructed. Altogether the sum of about £7,344 was expended during the years named in improvements to the dam; this probably included a sum spent in widening the roadway. The improvements in the river below the Cook's River Dam, viz., forming fascine banks and dredging, have so improved the channel that the tidal range at the dam has been largely increased, low water being now about 2 feet below what it formerly fell to at that point; this at once points to the possibility of improving

C. W. Darley, Esq., improving the drainage outlet by lowering the sills. In one of the earliest reports, viz., that by Mr. Stayton, dated 19th July, 1888, he deals with the state of the then drain or creek between Renwick-street and Cook's River; this has, however, been subsequently greatly improved by the Marrickville Council constructing a drain lined with sheet-iron the whole way down the valley, from near St. Peter's Station, which provides a free discharge to Cook's River; he also suggests the opening of the flaps in Cook's River Dam, or the total abolition of the dam. On this report Mr. Bennett, the Engineer-in-Chief for Sewerage and Commissioner for Roads, writes a minute as follows:—"Now that the river below the dam has been improved by the Harbours and Rivers Department and made susceptible of further improvement by deepening, there is no doubt that the proper course is to make a clear deep opening in Cook's River Dam, remove the sluices, if required, higher up the river, reclaim the surplus land along river by embanking and filling in to above junction of the Marrickville Creek, straightening and deepening that creek—so as to bring the level of low water at Botany right up, by widening the creek; also the discharge of floods could be provided for, some material obtained to raise the level of the adjoining low-lying land, and by having, at reasonable intervals, simple flushing-gates, the high water could be retained until ebb allowed a good cleansing flush being let go. The removal of the dam, now that a definite channel is made below would most likely have the effect of reducing high flood level in Cook's River." This minute is quoted in full as it embraces most of the main features of all the more recent proposals. About this time a number of residents and others interested formed themselves into what was termed the "Marrickville Sanitary Trust"—and drafted a Bill to submit to Parliament—seeking power to resume all low-lying land, improve it by drainage works, and re-sell, &c. On this draft Bill or scheme, Mr. E. B. Price was asked to report. His report is among the papers already handed in. Mr. Price points out that the capital of the Trust was limited to £100,000, which excludes the purchase of land and compensation, but according to Mr. Price's estimate, the works proposed would most probably cost £158,000, exclusive of purchase of land, and he arrived at the conclusion that it would be impracticable to raise the whole valley above flood-level, as proposed. Mr. Price then goes on to recommend a scheme embracing the following principal features:—

1.—A dam across Marrickville Flats, near Tempe.

2 and 3.—North and south intercepting drains, the former 84 feet wide, and the latter 20 feet wide.

4 and 5.—A low-level drain up centre of valley, and raise the ground on either side.

6.—To erect a pair of low-lift centrifugal pumps to deal with low-level drains.

Estimated cost, exclusive of the purchase of land, houses, and compensation, £51,817.

As many streets have since been formed and built upon along the site where it was proposed to construct the intercepting drains, it is very probable that the cost of resuming the land required to form the drains now, would amount to nearly £100,000, so this scheme would seem to be out of the question, on account of the probable cost. Mr. Bagge, Assistant Engineer for Sewerage Construction, next reported. [*Vide Appendix*]. He compares Mr. Stayton's and Mr. Price's suggestions, preferring the former, and gives fresh estimates for various schemes, varying from £11,000 to £141,400. Mr. Hickson covers this with a minute recommending Mr. Price's scheme. [*Vide Appendix*]. Mr. Williams next reported. [*Vide Appendix*]. He recommends additional dredging in Cook's River below the dam—the lowering of the sills in the dam, construction of ten additional sluice-gates, and deepening and widening the channel above the dam, estimated cost, £14,000. The matter is then referred to Mr. Darley for report. In his report [*Vide Appendix*] the scheme now submitted to the Public Works Committee is sketched out; no estimate is attached, this scheme being fully dealt with later on. The next stage is reached when the Marrickville Council offer a premium for the best scheme for dealing with the whole subject. So far as can be gathered from the papers, the award was given to an author signing his paper "Digna Sequamur," which was submitted by the Council for the consideration of the Department. The scheme proposes the formation of a navigable canal from Cook's River up through the centre of Marrickville flats, requiring—

1. Removal of a portion of Cook's River Dam, and erection of five bridges, viz., four of 30 feet span and one of 50 feet span, with 14 feet headway.

2. Dredging Cook's River above railway bridge to a depth of 9 feet.

3. Raising the railway bridge 6 feet, and an additional opening for Wolli Creek.

4. Dam across Marrickville flat.

5. Navigable canal, 95 feet wide, up flat, alongside the railway, with an entrance lock and upper basin.

6. Filling up low ground to high-water mark.

7. Two lift bridges and three fixed bridges over canal.

8. Three miles of new roads along canal banks—Cost estimates at £41,263.

A foot-note states: "This estimate does not include the raising of Tempe railway bridge, nor compensation for filling up low lands, for it is considered that the Railway Commissioners should do the first, and that the latter is an improvement to property." This scheme was referred to Mr. Price for report. [*Vide Appendix*]. After dealing fully with the scheme, Mr. Price points out that it is altogether underestimated, and sums up by saying, "The conclusion I have arrived at as to the merits of the scheme prepared by 'Digna Sequamur' is that it would be very costly, and would not prevent the periodical flooding of Marrickville." In August, 1892, Mr. J. B. Webster, Borough Surveyor, supplied the Marrickville Council with a lengthy report on the subject, but the recommendations are very similar to those proposed in 1890 by Mr. Darley. He suggests that certain temporary works be carried out, at an estimated cost of £6,887, this is chiefly to lower the sills of the flood gates. The *précis* shows that subsequent action taken mostly during 1895, had reference to the insanitary condition of Cook's River and Wolli Creek, due, no doubt, to the very dry season. The Minister having previously instructed Mr. Darley to prepare plans and estimates for the scheme, on the lines suggested by him, this was done, and on 12th February, 1895, Mr. Darley submitted the following report and estimate—"Numerous reports have been prepared dealing with this matter. In November, 1889, Mr. E. B. Price made a careful investigation, and sent in a report and estimate (M.P. 89/7,903). In April, 1890, Mr. Williams prepared a report (M.P. 90/2,764). On this I wrote a minute, pointing out the direction in which the improvements should be commenced (M.P. 90/3,202). About the same time Mr. Hickson wrote a report, and submitted several alternative estimates for dealing with the drainage (M.P. 90/498 sewerage). The Council subsequently offered a premium for the best scheme, and, I believe, awarded the prize to one marked "Digna Sequamur" (M.P. 92/3,201). Mr. Price reported on the proposal made therein (M.P. 92/8,741), the conclusions Mr. Price arrived

arrived at being "that it would be very costly, and that it would not prevent the periodical flooding of Marrickville." Mr. Price's report deals chiefly with the question of providing intercepting channels for dealing with the upland drainage, and a pumping station and channel to deal with the low levels. I consider it unnecessary to open this part of the subject again, as it seems to me to be a matter which should be dealt with by the council, or a local trust on the betterment principle, but as pointed out in my previous report, I think the Government might take in hand the outfall or Cook's River improvements to provide a better escape for flood-waters and prevent the backwater flooding, which now takes place when Cook's River is in flood. Many years ago the Government constructed Cook's River Dam, and provided flood-gates therein, but these are insufficient to let off flood-waters, and at any time not low enough to obtain any benefit from low-tide drainage. It would be a very simple matter to remove a portion of this dam, and provide a bridge across the opening, and then construct a dam with low sluice-gates across the outlet from the Marrickville flats, but the question of admitting salt water up Cook's River, and submerging a large area of land with salt water at high tide would soon crop up, and lead to much trouble, as I assume all those who own lands have a vested interest in the fresh-water frontage. This I pointed out in my previous report, and the surveys that have since been made have further confirmed me in this opinion. I, therefore, see no reason whatever for departing in the least from the scheme I originally proposed, namely, to remove 300 feet of Cook's River Dam, and construct a road-bridge across the opening, and to construct a dam with low and ample sluice-gates across the Marrickville drainage outlet, keeping the top high enough to prevent floods passing down Cook's River from entering the lowlands. Construct concrete overshot dams across Cook's River, near Undercliffe Bridge, and across Wollie Creek, a short distance up from its junction with Cook's River. Then to construct fascine banks or training-walls to keep tidal and flood waters from entering the low portion of Unwin's Hill Estate. To resume some frontages near Tempe and make reclamations in front. I have had soundings and borings taken, and detail plans have been prepared for all these works, and estimates have now been prepared. I estimate the cost as follows:—

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	£	s.	d.
Removing Cook's River Dam, altering level of portion of road, re-making same, and providing side fences	800	0	0
New timber bridge, 300 feet long and 40 feet wide	5,500	0	0
Temporary bridge, required during progress of works	1,600	0	0
Training-walls and fascine banks on both sides	10,200	0	0
Dam and sluices across Marrickville flats	4,300	0	0
Dam and sluices across Cook's River at Undercliffe	3,100	0	0
Dam and sluices across Wollie Creek	2,600	0	0
Dredging full width of channel 5 feet deep up Cook's River to Undercliffe and up to Wollie Creek dam	5,000	0	0
Contingencies (say)	3,300	0	0
<b>Total</b>	<b>£36,400</b>	<b>0</b>	<b>0</b>

In this estimate I have not put down any sum for land resumption—some questions of title are likely to crop up, so I have avoided the subject—but I doubt if the item can possibly be a heavy one under any circumstances. The objects to be gained by this scheme will be to keep the Cook's River waters wholly out of Marrickville, to let the flood-waters pass freely down and escape much more rapidly than is possible at present, to lower the low-water level of Cook's River above the present dam by fully 2 feet, and thus provide a better and lower escape for the drainage. I think that if the owners of property in Marrickville carried out the drainage of the lowlands, as sketched out by Mr. Price, at their own cost, that the Government might undertake the outlet works as set forth in my estimate. I have put down the sum of £5,000 for dredging. Perhaps this item might be omitted, as the work would be carried out by our dredges, and paid for from the annual dredge vote, as in the case of all other river dredging. This is the scheme which has been submitted for the consideration of the Public Works Committee. During the debate on this matter in Parliament the sum of £56,000 was named as the probable cost of Mr. Darley's scheme. This was the first estimate prepared, but it included sums for an iron bridge in Cook's River Dam instead of a wooden bridge subsequently adopted; also sums for lengthening the railway bridge and Unwin Road Bridge. Mr. Darley decided not to provide for these works, as it was very doubtful if they would be necessary for the scheme, and, as they involved a sum of £20,000, they were omitted and the estimate reduced to £36,000, which sum appears in Mr. Darley's report.

#### ALTERNATIVE PROPOSAL.

When further investigating this matter, it occurred to Mr. Darley that the object sought, viz., to drain Marrickville lowlands, might be accomplished in a manner different from any scheme previously proposed. Mr. Darley's report is as follows:—

##### *Alternative Design for Drainage of Marrickville Flats and Improving Cook's River.*

Engineer-in-Chief for Public Works to Under Secretary.

Department of Public Works, Engineer-in-Chief's Office, Sydney, 11 June, 1896.

When further investigating this subject preparatory to dealing with it before the Parliamentary Standing Committee on Public Works, it occurred to me that all the schemes hitherto proposed were more or less liable to be ineffective during heavy floods in Cook's River. There is no doubt but that much of the flooding of the lowlands which has taken place in the past was due, not so much to rainfall in the Marrickville basin as to the flood-waters of Cook's River entering and passing up the Marrickville valley.

The dam at mouth of valley proposed in the scheme submitted would, of course, confine the flooded river to its own channels, but so long as a flood lasted there would be little or no get-away for the rain waters collected on the Marrickville drainage area, and even if the Cook's River Dam were removed and other improvements carried out, Cook's River, when in flood, must always maintain a level up to—if not above—mean high level. It is therefore obvious that if an outlet could be provided for the Marrickville surface drainage away from the influence of Cook's River floods, it would be most desirable to bring this about.

I find this can be done by constructing a drain through a tunnel, passing from the centre of the valley a little below the Marrickville to Burwood branch railway junction to Shea's Creek, passing under the Cook's River Road, near the Bay View Asylum.

The invert of this drain to start at about L.W.M.S.T. with a fall of 1 in 3,200 through the tunnel, which I propose making 15 feet wide and 6 feet high. Being through sound sandstone rock, very little lining will be required; but at the ends of the tunnel there might be a length of covered way to avoid land severance.

At

C. W. Darley,  
Esq.  
16 June, 1896.

At the outlet of tunnel it will be necessary to construct a set of self-acting sluice-gates to shut out tidal waters and allow the inland water to escape during falling tides down to low-water level. From the outlet end of tunnel to Shea's Creek I propose to construct an open canal 50 feet wide and 2 feet deep at low water, free from any disturbing influence such as must exist in Cook's River, to within 3,200 feet of the centre of the Marrickville basin.

It will still be necessary to construct the dam across the outlet of the valley, as in original scheme, but without any sluice-gates, and to lower the sills of the sluice-gates in the Cook's River Dam, and to carry out some dredging for the sanitary improvement of both Cook's River and Wollie Creek, but otherwise to leave things as they are. This will save the cost of expensive bridges, levees, two dams, and sluice-gates.

I estimate the cost of this alternative scheme as follows:—

Tunnel and drain to Shea's Creek, with flood-gates, &c., complete .....	£15,000
Dam across Marrickville valley .....	2,000
Dredging in Cook's River and Wollie Creek .....	4,000
Lowering sills, Cook's River Dam .....	2,000
Contingencies (say) .....	2,000
Total .....	£25,000

In this scheme sluice-gates in the Marrickville dam are unnecessary, thus making that work much less costly, for even in the event of an abnormally heavy rainfall taking place and submerging the tunnel for a time during high water, this can but cause a very temporary flooding, and such would still occur were sluice-gates provided, as they would be inoperative through the flood-waters in Cook's River.

In a short time the sewerage reticulation of the district surrounding Marrickville flats, as well as a low-level system for the more densely populated part of the lowland, will be carried into effect. This will remove all cause of pollution which makes the drainage from this valley so offensive, and causes much of the fouling of Cook's River.

Within the last year or so, many complaints have been made of the polluted state of Wollie Creek. The reports on the subject indicate this to be more or less due to water discharged from a tannery and obstruction in the creek caused by the growth of weeds, &c. This might be removed by some dredging for which provision is made in the estimates, but lowering the sills of Cook's River Dam, and occasionally sluicing out with salt water, may do much to improve the condition of the water inside the dam.

I have made no provision for drain through the valley approaching the tunnel. These drains should be cut wide and as straight as possible to give a free discharge towards the tunnel.

This work is not included in either scheme, as I consider the local drainage should be carried out by the Council. It should not, however, be a costly matter.

C. W. DARLEY.

3. Why do you propose to extend the fascine bank beyond the dam in Wollie Creek? To prevent the water from running on to the land crossed by the Unwin's Bridge Road.

4. Is that private land? Well, the Government paid for the piece which was taken for the Western Suburbs sewerage main, but there is a legal question involved. It is open to question whether all the land originally below high-water mark does not belong to the Government.

5. Have you a map showing the drainage area of Cook's River? Yes; the map of Sydney and its environs before the Committee, shows, enclosed by red lines, the Marrickville water-shed, 1,700 acres; the Cook's River water-shed, 8,000 acres; and the Wollie Creek water-shed, 5,000 acres—a total area of 14,700 acres. I also submit a plan showing my alternative scheme, and a longitudinal section.

6. Have you a sketch showing the nature of the improvements which have been made in the Marrickville Creek basin? I think the plan before the Committee shows most of the houses erected within that area.

7. Have you any information with reference to the value of that land and of the improvements upon it? No, I have not. The Marrickville Municipal Council would give you that information.

8. What is the rise and fall of the tide in Cook's River below the present dam? Six feet.

9. Therefore, it follows that any portion of the Marrickville Creek basin, which is 6 feet below high-water mark, cannot be drained except by pumping? Yes; but none of the land is quite so low as that. There are, however, 100 acres which are below high-water mark.

10. *Mr. Wright.*] How much would the lowest of that land be above low-water mark? About 3 feet.

11. *Chairman.*] If there were a flood in Cook's River, you could not drain the water from the Marrickville basin? When Cook's River is in flood no water can escape from the Marrickville basin.

12. Cook's River would be in flood at any time when the Marrickville valley was likely to be submerged by local rains, so that even if your works were carried out the valley would still be submerged at certain times? There may be times, after a very heavy fall of rain, when the tunnel will not carry off the water as quickly as it comes to it.

13. I am referring to the first scheme, not to the alternative scheme? There may be periods when the water will accumulate in the valley in the way you mention.

14. How high does Cook's River rise in flood time? We have had the flood-water about 2 feet over the dam.

15. Under the altered condition of things which you propose to bring about, must not Cook's River occasionally rise sufficiently high to prevent the water from flowing off the Marrickville valley? That is so.

16. Can you tell us how often that is likely to happen? Whenever the river is in flood. We have had several floods in some years, but there has been no flood for the last two years.

17. Is this then a flood relief scheme which will be ineffective in flood time? It will be ineffective while the flood in Cook's River lasts.

18. What area of land drains into Cook's River in addition to the area shown upon the plan? 8,000 acres.

19. What municipalities drain into it? —

20. Will Cook's River become a sewer for the reception of the drainage of those municipalities? All their storm-water drains will find an outlet in the river.

21. Therefore the proposed improvement to the river will be of benefit to other municipalities besides those immediately affected by the existing nuisance? That is so.

22. The substitution of an open bridge for the present Cook's River Dam will necessitate the construction of a long fascine bank on the south side of the river, and the making of a dam across Wollie Creek and across a higher part of Cook's River, together with a dam across the outlet of the Marrickville valley? Yes.

23. If sluices were made in the present dam, would not that do away with the necessity for all these works which are intended to prevent the sea-water from running on to the adjacent lands? Yes; but whenever Cook's River was in flood its waters would flow up the Marrickville valley, and we want to stop that. The residents in the Marrickville valley suffer most from the flood-water of Cook's River running up into the valley. The valley might be flooded in consequence of heavy rainfall upon the southern slopes of Ashfield, Petersham, and Canterbury, although there might be no rain locally.

24. But if you have sluice-gates in the present dam the sea-water would be kept out of the river? The sea-water is kept out now. C. W. Darley,  
Esq.  
16 June, 1896.
25. The flooding of Marrickville valley by local rain-water would probably occur when Cook's River was in flood? Yes, the worst floods occur in that way; but you may have a flood from one cause alone.
26. The flooding of Cook's River is caused by heavy rainfall above the dam? Yes.
27. Have you given the Committee any detailed information as to the cost of resumption, the cost of the fascine work, and so on? I will supply that information.
28. What is the total cost of the alternative scheme? £25,000.
29. Does that include the cost of land resumption? There will be so little land resumption that I have put nothing down upon that account. It will not be necessary to resume the land through which the tunnel will pass. I think the only land that will have to be resumed will be a piece lying between the mouth of the tunnel and Swamp Road.
30. *Mr. Wright.*] That is not very valuable land? No.
31. *Chairman.*] To what distance are the banks of Shea's Creek fascined? For nearly a mile above Ricketty-street.
32. Then the fascine banks there prevent the tide from flowing on to the adjacent land? Yes; the tide is confined within the channel of the creek.
33. The alternative scheme is simply a scheme for draining Marrickville Flats? Yes; to drain the Marrickville valley, and to prevent it from being flooded by the water of Cook's River.
34. Would not the first scheme, besides benefiting the people in the Marrickville Valley, be advantageous to the residents of other municipalities? You would not get as good a result from the first scheme as from the alternative scheme. Cook's River itself will be sufficiently improved by lowering the sills of the flood-gates in the dam 2 feet, and thus allowing a better discharge.
35. Why will the alternative scheme bring about a better result? Because the proposed drain will discharge at a lower level than could be got if the water were taken to the outlet of the Marrickville Valley. Cook's River is so wide at Shea's Creek that it is impossible for any flood to make any great difference in the height of the water there.
36. The proposed drain will have a better fall? Yes, it will have a constant fall at extreme low water, whereas the fall into Cook's River above the dam would be uncertain. The fall there would depend upon whether the river was in flood or not, and the chances are that in flood-time the water would not be able to get out of the valley.
37. If your first scheme were carried out the water would have to travel about a mile and a half to reach the mouth of Shea's Creek, while if the alternative scheme were carried out it would only have to travel a mile? Yes; but I do not think that any flood in Cook's River would materially affect the water-level of Shea's Creek.
38. If the Cook's River Dam were removed, and the river rose 6 feet at the mouth of Marrickville Creek, would it be down to sea-level at the mouth of Shea's Creek? If the dam were removed I do not think the river would rise more than 3 or 4 feet at the mouth of Marrickville Creek.
39. If it rose 3 feet at the mouth of Marrickville Creek, would it be down to sea-level at the mouth of Shea's Creek? Yes.
40. That would mean a fall of 3 feet in a mile and a half? Yes; but immediately below the present dam the river spreads out into a very wide channel.
41. Why was the dam originally constructed? I was speaking to-day to an old resident who saw the first man walk over the dam after its completion in 1841, and he told me that it was constructed merely as a causeway; but it is evident, from the fact that sluice-gates were put into it, that there was also an intention to keep the water above the dam fresh. There were some manufactories there, I believe, which required fresh water.
42. You recommend that the scheme before us should be carried out at the expense of the State, and that the works necessary to bring the water in the Marrickville Valley to Cook's River should be carried out by the local municipality? Yes.
43. Do you make a similar proposal in regard to the alternative scheme? Yes.
44. The alternative scheme simply provides a storm-water channel? Yes. The object of that scheme is to prevent one district from being flooded by water coming from other districts.
45. Was the storm-water channel at Croydon constructed at the expense of the State? Yes; but the local municipalities are taxed to pay something towards its cost.
46. Is this a similar case? Not quite; because the water flowing into the Marrickville valley comes from other districts. To prevent water from entering that valley it is necessary to block up the natural outlet, and the proposed channel gives another outlet.
47. If the Cook's River Dam were removed the locality would be as nature left it? Yes; and then the salt-water would cover 100 acres of land there.
48. *Mr. Fegan.*] You propose to drain private land at the expense of the public? The same thing has been done in a number of similar cases. On the Hunter, for instance, the Government have constructed dams to prevent flood-water from flowing upon adjacent lands. Of course, if we put a dam across the mouth of the Marrickville valley any water draining into the valley would be impounded there, and, therefore, we propose to construct a channel draining towards the mouth of Shea's Creek.
49. *Chairman.*] You say that if the Cook's River Dam were removed, you would have to protect a large area of land above the railway bridge from being overflowed by salt-water? Yes; I think the Government would be bound to prevent that land from being covered with salt-water.
50. *Mr. Hassall.*] What is the object of the scheme? The object of the scheme is to drain the Marrickville flats, and to prevent the flood-water of Cook's River from flowing over that land.
51. It is a scheme to drain the low-lying parts of Marrickville? Yes.
52. What area of land would be inclosed by the fascine banks on the south side of the river? About 20 acres, I think.
53. Is that land now flooded at high water? No; because the sea-water is shut off by the Cook's River Dam.
54. Is it low-lying land? Yes. The sea-water is only held off it by the dam.
55. What are the fascine banks for? To keep the water off the land after the dam has been removed. If the dam were removed, and no means were taken to protect the land, the salt-water would flow over it to where there is a blue line shown on the map.

- C. W. Darley, Esq.  
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56. If the dam is not removed that land will remain in its present condition? Yes; the owners of that land make no complaints at present, except about the unsanitary condition of Cook's River and of Wollie Creek. Wollie Creek is full of weeds, and there is a tannery discharging into it.
57. I suppose this land is not of much value at the present time? I think it is fairly good grazing land.
58. A fascine bank constructed around it would improve it materially? If the dam were removed such a bank would keep the salt-water off the land; otherwise the land would not be improved.
59. If the dam were removed, it would be necessary to construct this fascine bank and to make two other dams—one higher up Cook's River and the other across Wollie Creek? Yes.
60. Is there any person there who would have a claim upon the Government if salt-water were allowed to run upon that land? I think the Crown would be liable for claims for compensation for loss of fresh water.
61. *Chairman.*] What objection is there to making more sluice-gates in the present dam? You could not in that way give the flood-water so free a vent as it would have if there were an open bridge. The object of removing the dam is to reduce the height of the water in Cook's River, and to enable the water to be drained off Marrickville Valley. The earthwork dam shown on the map is common to both schemes, but it would be cheaper to construct if the alternative scheme were carried out, because then no sluice-gates would be required.
62. How much would the water back up if there were large sluice-gates in the present dam? I think it would be more costly to put large sluice-gates in the Cook's River Dam. Originally there was only one sluice-gate in that dam, but that was found insufficient, and therefore, in 1861, a second was made alongside it; that cost £2,637. In 1876 extra sluice-gates were made at the southern end of the dam; they cost £4,600. Altogether, £7,344 have been spent in putting extra sluice-gates into the dam.
63. *Mr. Hassall.*] You estimate that if the water is kept out of the Marrickville Valley it will only be necessary to lower the sills of the present flood-gates 2 feet? Yes.
64. To whom does the land on the north side of the river belong which you propose to reclaim? I think that it is part of the Warren estate. It was cut up into small allotments, but I do not think it was sold. There is a small piece of land between a road and the water which we propose to resume in order to get rid of any frontage rights. That resumption will increase the value of the reclaimed land, which will have a long frontage to the Cook's River Road.
65. Do you think that that land will repay the cost of reclamation? I think so.
66. Why not reclaim the land on the opposite side of the dam? That place has only lately been dredged out as a sort of basin for ships.
67. The Government will sell the reclaimed land? It will be quite within the power of the Government to do so.
68. How will the Marrickville Council meet the Government in regard to the expenditure upon this scheme? I think that the Marrickville Council should make whatever drains are necessary to convey the water to the outflow channel.
69. Does this land drain into Cook's River now? Yes; it is drained by a channel passing through the middle of the valley, and following Carrington Road.
70. Is there an open drain? An open drain constructed with temporary water-pipes. It is 4 feet across, and 2 feet deep.
71. What provision do you make for draining the southern part of the valley? The valley is almost level. Water will run almost as easily from the end at which it is proposed to place an earthwork dam to the mouth of the tunnel as it will run from the other end of the valley.
72. Will the Marrickville Council assist in the construction of the proposed tunnel and channel? That is a matter for arrangement. I think that they might fairly be asked to pay in some degree towards it, though, as an engineer, I have not much to do with the matter. I have made no provision for the construction of drains leading towards the channel, because I think that those drains should be made by the Municipal Council. If the Government shut the water out of the Marrickville valley, and give an outlet for water falling into that valley, they will have done the most that can be expected of them.
73. The Government are not responsible for the water which flows into the valley? Well, the Government has accepted a similar responsibility in other parts of the Colony. On the Clarence, at Maitland, and in other places, large sums have been spent upon similar works.
74. But this expenditure will not benefit the public estate;—there is no Crown land here? No.
75. Do you think the alternative scheme is the better of the two? Yes; it is the better and the cheaper of the two.
76. If you drained into Cook's River the fall would depend upon the height of the water in the river, whereas if you drained towards Shea's Creek there would be a constant fall, without any danger of the water backing up? That is so.
77. If you commence to interfere with the works at present in existence, you begin to interfere with vested rights, and claims for compensation will follow? Complication will arise.
78. No complication can arise if the proposed scheme is carried out? No.
79. *Mr. Roberts.*] What will be the cost of your proposed tunnel? £15,000 will be the cost of the open channel, the tunnel, and the outlet works. Sluice-gates will be necessary to keep the salt-water from coming up the channel.
80. What area of land will it drain? 1,700 acres.
81. How much of that area is within the Municipality of Marrickville? —
82. What other work is there in connection with the alternative scheme? The dam across the entrance to the Marrickville valley, which is necessary to keep the flood-water of Cook's River out of the valley. Cook's River will flood the Marrickville valley as far as the Sydenham Road.
83. But if the proposed channel were made, would the flood-water pass it? Yes; I think it would. It would be necessary to prevent the water of Cook's River from flowing into the valley.
84. How do you propose to expend the £10,000 balance? £2,000 will go in constructing new sluice-gates in the existing dam, and £4,000 in dredging and cleaning out the channel of Cook's River and Wollie Creek. Then there will be the earthwork dam to construct, and about £2,000 for contingencies.
85. What area of land will be reclaimed? There will be no reclamation under the alternative scheme.
86. Are there any wharfs to be constructed? Not necessarily.
87. Will the railway bridge have to be lengthened? No; I do not propose to touch it.

88. *Mr. Wright.*] The fascine bank is only designed to protect the property it surrounds from sea-water? C. W. Darley, Esq. Yes.
89. I gather from your remarks that the alternative scheme will effect the object of draining the Marrickville valley with more certainty than the original scheme? Yes; and it will be cheaper.
90. If the alternative scheme is carried out will the pollution of the river cease? Yes; so far as that pollution is caused by the drainage coming from the Marrickville valley. I propose to guard further against pollution by lowering the sills of the sluice-gates in the present dam, and by spending £4,000 upon dredging and cleaning the river.
91. Will that effectually destroy the nuisance? I think it will.
92. A freer flow will scour the river? There will be a better scour, and it will be possible to admit the salt-water occasionally, and thus create an artificial scour with the help of the tide. That has been done lately with good results. We propose to lower the sills of the sluice-gates to low-water level.
93. You feel confident that this alteration will effectually destroy the nuisance? Yes.
94. Has the Metropolitan Water and Sewerage Board constructed any sewers in the neighbourhood of Cook's River? One main sewer has been constructed there, and the north-west slopes of Marrickville will drain into it. The reticulation works are now going forward. Contracts are also being prepared for the carrying out of what is known as the low-level system. That part of the district lying around Sydenham Station will be drained to a central place, and the drainage will then be pumped into the main sewer, which runs on the western side of the basin.
95. Does the bulk of that sewage now flow into Cook's River? Yes.
96. Principally house slops, I suppose;—the night-soil is dealt with differently? Yes.
97. When the sewerage works are completed a great deal of the present contamination will cease? Yes.
98. Your proposed channel is only a storm-water sewer? Yes.
99. It could not be made to drain on to Webb's farm? No; the sewage of the district will be conveyed by other sewers on to Webb's farm.
100. If the alternative scheme is carried out, what do you propose to do with Wolli Creek? We propose to clean it out.
101. What applies to Cook's River, so far as the scour is concerned, will apply also to Wolli Creek? Yes.

16 June, 1896.

THURSDAY, 18 JUNE, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.  
The Hon. CHARLES JAMES ROBERTS, C.M.G.  
The Hon. WILLIAM JOSEPH TRICKETT.  
HENRY CLARKE, Esq.  
CHARLES ALFRED LEE, Esq.

JOHN LIONEL FEGAN, Esq.  
THOMAS HENRY HASSALL, Esq.  
GEORGE BLACK, Esq.  
FRANCIS AUGUSTUS WRIGHT, Esq.  
FRANK FARNELL, Esq.

The Committee further considered the proposed Improvement of Cook's River.

Cecil West Darley, Esq., Engineer-in-Chief for Public Works, Department of Public Works, sworn, and further examined:—

102. *Chairman.*] There are one or two matters upon which I think you have some further evidence to give the Committee? Yes. I was asked yesterday to make a statement as to the separate cost of the different parts of the fascine work and so on. The cost of that work would be divided up as follows:— Estimated cost of fascine bank along the right bank of Cook's River from near Undercliffe Bridge to Unwin's Bridge, thence up left bank of Wolli Creek, including sluices, £3,980. Estimated cost of fascine bank along the right bank of Wolli Creek from the proposed dam to western boundary of Sparke-street, £800. Estimated cost of stone bank along the left bank of Cook's River from Unwin's Bridge to Cook's River Dam, £5,440. I do not propose to spend any money upon the private lands on the south bank of the river near the existing dam. I think the owners of that property will be very glad to improve it themselves. If any expenditure is required there, it will be very slight. The cost of the Marrickville Dam in the original scheme is £4,300, and in the alternative scheme, £2,000; but in the latter case no provision is made for sluice-gates.
103. Have you any definite scheme with regard to the completion of the work at Shea's Creek? No definite scheme. We are pushing on with the construction of the canal, and are improving the banks on each side, the ultimate design being to give wharfage accommodation.
104. Are the fascine banks there standing? Some of the fascine work is decaying, and is being repaired from time to time. It does not last.
105. Notwithstanding that it does not last, you intend to use it in Cook's River? Well, although the fascine work itself decays the clay behind it is left, and that is generally quite sufficient. At Shea's Creek I have recommended that the fascine work should be faced with stone pitching, and we are doing some of that work now.
106. *Mr. Humphery.*] The estimated cost of the alternative scheme—£25,000—does not, I presume, include the cost of land resumption? The land resumption can only be a very small item.
107. Can you say approximately how many acres will have to be resumed? I should say, at the outside, we shall not require more than 1 or 2 acres.
108. And that land is situated in the least valuable part of the district? Yes, it is low-lying land.
109. Will your channel enable the Municipal Council of Marrickville to drain the Marrickville Valley if they connect with it? Yes, it will allow them to drain off the surface water.
110. It will make sufficient provision to deal with floods? Quite sufficient.
111. Assisted by the dam at the mouth of the valley? Yes; the object of that dam being to keep the water of Cook's River out of the valley. The natural watercourse down the valley was very ill-defined, and became choked with weeds. Then, in the dry season, all the sewage of the neighbourhood accumulated in it, and when a fresh came this sewage was swept out and distributed over the surface of the land. The local

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C. W. Darley, local municipality then obtained from the Water and Sewerage Board a number of the temporary water supply pipes, which they split open and used to make a drain similar to that shown on the diagram before the Committee. This diagram shows the section of the present drain and of the proposed channel, with their relative levels. At the present time they can only drain the valley to about 3 feet above low-water mark, but the proposed channel will drain it right down to low-water mark. Last week, when there was a fall of 5½ inches of rain within twelve or thirteen hours, there were 10 inches of water lying on the surface of the ground at the site of the inlet of the proposed drain; but by the afternoon all the water was running down the present small drain. Of course it would take a very large channel to drain away the whole of the water falling on 1,700 acres, if it came direct to the channel, but we find from experience that rain-water does not reach such a channel all at once. Some of it soaks into the ground, and it is retarded in other ways.

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112. *Chairman.*] What is the level of the surface at the entrance of your proposed channel into Shea's Creek at the site of the Marrickville dam, and at the inlet of the proposed drain in the Marrickville Valley? If we call the low-water level at the mouth of Shea's Creek 10 feet, which is the level given on our plan, the average surface level at the site of the Marrickville Dam will be about 13 feet, and at the site of the tunnel inlet, from 14 to 15 feet.

113. *Mr. Humphery.*] What would be the fall of the channel? From 4 feet 4 inches to low-water.

114. And what fall is there from the Marrickville Dam towards the inlet of the proposed tunnel? The natural fall of the surface of the ground is slightly towards Cook's River; but the difference in level is not much more than a foot, so that by making any drain a little deeper at the tunnel end, you would get the water to flow into the tunnel.

115. What is the distance from the inlet of your channel to the Marrickville Dam? 2,650 feet. From the Marrickville Dam to the Cook's River Dam is 3,150 feet, and the whole distance from the intake of the channel to its point of discharge at Shea's Creek, going by way of the Marrickville Dam and along Cook's River, is 11,208 feet, while the actual length of the channel is 5,400 feet.

116. So that the discharge from the channel provided for in the alternative scheme will be at a point more than a mile from the Cook's River Dam? Yes.

117. That channel will drain off all the stormwater that would otherwise accumulate in the Marrickville basin? Yes.

118. If the alternative scheme is carried out, it will not be necessary to make the fascine banks shown on the plan before the Committee? No.

119. The only expense besides the cost of the channel will be in connection with the Marrickville Creek Dam, and the dredging of Cook's River and Wolli Creek? Yes, together with the lowering of the sills in the Cook's River Dam, for which I have put down £2,000.

120. But the expenditure in connection with the dredging of Cook's River, and the lowering of the sills in the Cook's River Dam may be looked upon as something altogether apart from your alternative scheme? Yes, it is a different expenditure.

121. *Mr. Trickett.*] Will you explain the working of the sluice-gates which you propose to place at the mouth of your channel? They will be ordinary flap valves, hung from the top, and will be so arranged that when the water in the channel is at a higher level than the water in the creek they will open; but when the tide in the creek rises they close automatically. These gates will be somewhat similar to the gates in the existing dam.

122. If you lower the sills of the gates in the first dam will not there be a risk of the salt water getting in? No; because the sluice-gates will be lengthened so as to keep it out.

123. Are you prepared now with the information asked for by question 81? Yes; the area of Marrickville watershed is about 1,700 acres. Of that the portion in Newtown is about 170 acres, the portion in St. Peters about 230 acres, and the portion in Marrickville about 1,300 acres.

124. Has the desirability of bringing this district under the operation of the betterment principle been considered by the Department? That is a matter of policy for the Minister to deal with. Very large drainage works have been carried out in the Newcastle district, but I am not aware that the betterment principle has been applied there.

125. In carrying out the alternative scheme, do you propose to improve any large area of land by filling in? No; all we do is to give an outlet for the stormwater in the Marrickville Valley.

126. Looking at the character of that part of Cook's River just above the dam, one would think that it would always remain pestilential unless some very definite channel were made;—is it proposed to do that? Everything will remain practically as it is; but if the Marrickville Dam is constructed it will be possible to keep the Marrickville Valley quite dry. Of course it will be necessary for the local municipal council to make drains through the valley to connect with our channel.

127. But in a stream like Cook's River, where there is so slow a current, if any at all, it would seem necessary to improve the channel;—I understand that there is a wool-washing establishment in Wolli Creek? A wool-washing and fellmongering establishment, I believe.

128. Will it not be desirable, if these works are carried out, to take steps to keep the stream clean in the future? I think that that would be desirable. In many parts of England manufacturers are required to filter any polluted water coming from their works before it is allowed to enter a river. A great deal of solid matter goes now into Cook's River besides the polluted water.

129. Is there much Government land along the banks of Wolli Creek? Not that I am aware of.

130. The land there has most of it been alienated? It has practically all been alienated, though some of the frontages belong to the Government. The land upon which it is proposed to erect the Marrickville Dam belongs to the Government, and the Government also owns some land between Unwin's Bridge Road and the main outfall sewer.

131. Will not the Marrickville Dam be likely to throw the water back on to the surrounding land? Not if proper provision is made for drainage.

132. At the present time that land drains into the river? Yes.

133. You propose to reverse the existing order of things? Yes.

134. And you think that there will then be no risk of flooding? There will be nothing like what occurs now. Whenever there is a fresh in Cook's River all that property is under water as now.

135. I presume that the land between the proposed dam and the inlet of the proposed channel is almost level? It is practically a dead level.

136. What is it used for now? There are some houses upon it; but it is chiefly waste land.

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137. You strongly recommend the adoption of the alternative scheme? Yes.
138. Do you think the local municipality will be able to bear the expense of constructing the necessary drains to connect with your channel? Yes; because I think the cost will be under £1,000. The municipality will be able to make these drains very cheaply, and they could use the material excavated to raise the level of various parts of the surface.
139. It is not likely that the people there would raise any objection to the undertaking? No; I should think they would be only too glad to have the land drained.
140. *Mr. Clarke.*] Who will benefit by this work—the public or the local proprietors? The local proprietors.
141. Do you think that they will be willing to bear part of the expense? I cannot say what the people of Marrickville think; but if I were a landowner there I should be willing to contribute.
142. You stated on Tuesday that in other parts of the Colony works of this kind were carried out entirely at the cost of the Government? At Maitland a great deal has been done on the principle of giving £ for £, though a great many works there have been carried out wholly at the expense of the Government. With regard to some works on the Richmond, I believe that the people benefited have agreed to pay part of the cost eventually, but in the meantime the Government is bearing the whole expense.
143. Do you think there will be any claims for compensation in connection with the making of the proposed channel? There will be no room for such claims, except in regard to the smaller drains, which I recommend should be left to the municipality. A municipality can always deal with people better than the Government can.
144. If the proposed fascine banks were made, would some of the low-lying land in the district still be liable to flooding? In times of very heavy rainfall the water might not run off the land as fast as it fell, but it would only lie on the land for about a day.
145. You do not propose to pump the water off the land? No. If a very heavy fall of rain occurred during a high tide the water might back up in the channel for a short time.
146. Have you proved these fascine banks to be a success? In certain cases they have answered very well; but I prefer to face a permanent work with stone. The fascines, however, are better than a clay bank, because they prevent a scour.
147. You use ti-tree in their construction? Yes.
148. Will that be easily obtained in the locality? There will be no difficulty in getting it.
149. How long do these fascine banks last? The outer portion decays away in about five years; but a good solid bank is left behind. Under some circumstances we might dispense with the fascines altogether.
150. Are you aware that at Moruya a large amount was expended upon fascine dykes which did not prove a success? Yes; but Mr. Moriarty, the then engineer, was quite opposed to the use of fascines at that place.
151. The first heavy flood swept the fascine work away? Yes, because it was built on sand, which the flood-water undermined. The Minister ordered the work to be done in spite of the protest of Mr. Moriarty.
152. *Mr. Lee.*] I think that a double object was sought to be gained by this work—first, the draining of the Marrickville Flats, and, secondly, the rapid removal of water in Cook's River? In the original scheme the two things had to be combined; but the second object is not essential in the alternative scheme.
153. The dam across the entrance to the Marrickville Flats is to be put there solely to prevent the inflow of water from Cook's River? Yes.
154. In the original scheme sluice-gates were provided in that dam? Yes; to let the water from the Marrickville Valley drain into the river.
155. In dealing with this matter, it is essential to prevent the inflow of water from Cook's River? Yes.
156. If there were a phenomenal fall of rain upon the Marrickville Valley, and a heavy flood in Cook's River, the water would be impounded at the dam under the first scheme? Yes.
157. I understand that the water which now spreads over Marrickville Flats carries with it a great deal of insanitary matter, which, being deposited, causes a great nuisance? Yes.
158. This insanitary matter is deposited not only on the surface of the ground but also in the buildings which are flooded? Yes.
159. You think that the alternative scheme will best keep this district from being flooded? Yes.
160. Either that scheme must be carried out or some system of pumping must be adopted? Yes; but I think that this scheme will be found sufficient.
161. The alternative scheme has this advantage: that it will enable the water falling into Marrickville Valley to immediately discharge itself into Sheca's Creek? Yes; without the disturbing influence of any flood in Cook's River.
162. If the alternative scheme be carried out will it be still possible for water to accumulate in the valley? If a very heavy rainfall occurred during a high tide the drains leading to the channel might overflow.
163. How long would a high tide last? Say, for three hours.
164. A high tide would obstruct the free discharge of the water? Yes; we cannot shut our eyes to the fact that the surface of the ground in the Marrickville Valley is 2 feet below high-water level, and, therefore, at high tide there is no outlet for the drainage of the valley.
165. There is no other point at which you could arrange for a better fall? No.
166. Therefore, under the most extreme conditions the flooding of the valley will not last for more than a few hours? No.
167. Now it lasts for days? Yes.
168. The drain which was constructed by the Marrickville Council has, to a certain extent, failed in its object? It is as effective as it can be expected to be. It drains the water into Cook's River pretty rapidly when Cook's River is not in flood.
169. From an economical point of view, it would seem eminently more practical to prevent flood-water from getting into the valley than to make provision for taking it out of the valley after it has got in? Yes.
170. Do you think that the lowering of the sills in the Cook's River Dam, and the dredging of the river above, will keep the water there free from pollution? The proposed work will allow the water to run off more rapidly. Complaints about the state of the river occur principally in very dry seasons, and at such times it would be possible to occasionally flush out the basin with salt-water.

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171. What is the object of dredging Wolli Creek. We propose rather to clean out the water-way. In some parts you can hardly see the water-course, because of the reeds.
172. If these works were carried out, you think the condition of the river would be very greatly improved? Yes; a great deal of the drainage that now finds its way into the river will be shut off by the Marrickville dam, and in the course of a year or two the slop-water from the whole district, which now goes into the river, will be drained into the metropolitan sewers.
173. If we adhere strictly to the object of preventing the pollution of Cook's River, we must adopt scheme No. 1? I think that by lowering the sills in the Cook's River Dam the alternative scheme will be equally effective. No. 1 scheme would be more expensive; but I do not think that it would improve the condition of the river more than the alternative scheme.
174. You can give almost as much relief by the alternative scheme as by the original scheme? Yes.
175. I presume that neither scheme would involve interference with the railway line? No.
176. Will either scheme mean the closing of any roads? No.
177. With regard to the route of the proposed channel, I notice that for a long way it goes down Way-street? It follows the line of the street; but it will not affect the traffic, because it will be underneath.
178. Has the Government power to enter upon and tunnel under these roads without compensating the municipality? Yes; the Government has power to tunnel under any land for drainage work without paying compensation.
179. *Mr. Fegan.*] Does the Burwood Road railway prevent the water from getting out of the Marrickville Valley? No, because very large openings have been left in the embankments.
180. What is the depth of Cook's River at the site of the proposed Marrickville dam? Two or 3 feet at low water.
181. What is the bed of the river? Mud, on sand.
182. Is there any rock there? Not for some depth.
183. Then dredging will be easy enough? Yes.
184. I suppose you will use one of the small sand-pumps? No, a small grab-dredge.
185. What is the thickness of the sandstone along the line of channel? It crops out on the surface all the way. There will be 60 feet of cover under Cook's River Road. All across the hill the stone crops out on the surface. On the Shea's Creek side, however, the rock drops very suddenly.
186. What is not tunnel will be open drain? Yes.
187. What would be the cost of covering that drain? To cover it would be a costly matter, and nothing would be gained by doing so.
188. Has any offer been made by the municipality or the landowners of the district to convey to the Government free of cost any land required for the carrying out of the proposed works? No; we have not been in treaty with anyone about it. If the alternative scheme were adopted, the only land that would have to be resumed would be a small piece between the outlet of the channel and Swamp Road. About an acre of land would be required there.
189. Is that all the land that would have to be resumed? That, and a little bit at the site of the proposed dam.
190. When was this nuisance first complained of to the Department? The Department has been reporting upon it since 1885.
191. And a great deal of expense has been incurred in trying to get rid of it? No; the Government have not spent very much, except in maintaining the sluice-gates at the Cook's River Dam. The municipality, however, has incurred a good deal of expense.
192. Will not the alternative scheme, if carried out, ultimately form part of the sewerage system? It will help the sewerage system by taking off the surplus water which would otherwise drain into the low-level system, and have to be pumped into the outfall sewer.
193. That being so, do you not think that half the expense of the scheme might be put as part of the expenditure on the general sewerage scheme? The sewerage system will certainly benefit by the construction of this channel.
194. Therefore, part of the expense should be borne by that Department? All the storm-water drains in Sydney have been transferred to the Water and Sewerage Board, and that Board collects rates upon them. This drain might be dealt with in the same way.
195. *Chairman.*] How far does the Marrickville Valley extend? The flooded district extends close up to the St. Peters station.
196. Does the flood-water go up as far as the clay-pit marked on the map? Yes. A heavy flood in Cook's River will cover all that land, even if there has been no local rainfall.
197. Have you a statement as to the area of this valley? The following table shows flooded areas and quantity of water at various levels:—

Contour.		Area.	Contour.		Area.
R.L.		a. r. p.	R.L.		a. r. p.
13·00	3 feet below high water .....	1 2 15	17·00	1 foot above high water .....	138 3 0
14·00	2 feet below high water .....	14 3 35½	18·00	2 feet above high water .....	159 0 9
15·00	1 foot below high water .....	48 0 14	19·00	3 feet above high water .....	176 2 16
16·00	High water .....	109 2 37	20·00	4 feet above high water .....	.....

198. The difference between the original scheme and the alternative scheme is that the alternative scheme gives a fall which will enable the flats to be thoroughly drained, while the original scheme would leave 4 feet of water upon it at times? Yes; the fall given by the alternative scheme will allow all the water to drain off the valley.
199. *Mr. Humphery.*] What is the amount fairly chargeable under the alternative scheme to the draining of the Marrickville Valley;—is it about £18,000? Yes.
200. *Mr. Wright.*] The balance of the £25,000 will be expended with the object of purifying Cook's River? Yes, and of giving a better discharge to the water there.

FRIDAY, 26 JUNE, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. CHARLES JAMES ROBERTS, C.M.G.  
The Hon. DANIEL O'CONNOR.HENRY CLARKE, Esq.  
JOHN LIONEL FEGAN, Esq.

FRANK FARNELL, Esq.

The Committee further considered the proposed Improvement of Cook's River.

John Ashburton Thompson, Esq., M.D., D.P.H., Chief Medical Inspector to the Board of Health, sworn, and examined:—

201. *Chairman.*] What is your official position? I am Chief Medical Inspector to the Board of Health.
202. Have you a knowledge of the submerged area in Marrickville known as Tram Vale? Yes.
203. Some years ago you made a report in regard to that place? Yes.
204. Have you had an opportunity of refreshing your memory in regard to your report? Yes.
205. You maintain its correctness still? As far as I know, certainly.
206. Have you recently seen the country under consideration? Yes, within three months. I have seen it from time to time pretty continuously for the last eight or nine years; I know it thoroughly well.
207. You are prepared to express a definite opinion on its sanitary state? Yes.
208. Had you made any report subsequent to the report you made in 1888? There have been from time to time complaints from persons who have bought land on that flooded area during dry weather, and have erected houses, and who found themselves in a lake when the weather became wet. There have been several complaints from such people who sought some remedy. My attention has been drawn again and again to the circumstances, and I have on two or three occasions reported concerning the area, but always with reference to a particular case.
209. The tenor of each report being somewhat similar to the tenor of the general report? Entirely to the same effect.
210. *Mr. Farnell.*] At whose instance were you called upon to report in 1888? A gentleman named Campbell seems to have made a complaint.
211. How many times have you been called upon to make a report? I was never called upon to report on the matter except in connection with the definite complaint of some inhabitant. I have been called upon to report under these circumstances perhaps two or three times, but as I had in 1888 made a formal report of rather a general character I never repeated my remarks.
212. Had you made a full report subsequent to 1888? No.
213. Do you know how many municipalities are concerned in this matter? No. I know the lay of the land.
214. How many do you think are concerned? St. Peters, Newtown, perhaps Petersham, and Marrickville.
215. Any improvements which might be carried out would not be alone for the benefit of the Borough of Marrickville, but would partake of a national character? That was not exactly what I meant. The municipalities I mentioned are interested in the matter because they supply the offensive material. In as far as the area referred to is offensive, that is, of course, the fault of other municipalities than the one within which the area lies. In as far as the area is flooded I do not know anything about that. I take it that that would be an engineering matter altogether.
216. In 1888, I take it, the whole of the surroundings were in a primitive condition as regards any arrangements for the discharge of the flooded waters and sewage? That was so. The natural watercourse by which these matters would be carried off appeared to have been interrupted by the embankment, the road made across the channel.
217. Do you know whether any attempt has been made by the local authorities to remedy this nuisance? Their efforts have been confined to straightening and re-forming the creek referred to, so that the slop-waters coming down from the other municipalities I mentioned might run through their district and not lodge in it.
218. Has this straight water-course had the desired effect? Not altogether. It has been beneficial as far as it goes during dry weather, but as soon as Cook's River rises it backs up the slop waters in this channel which is then insufficient for the purpose.
219. Would that be the means of distributing the sewage over a broad area? Yes.
220. Would it be that until the tide receded these waters would remain in these areas? Yes.
221. Have you subjected the sewage to any analysis? No.
222. Apart from the possibility of infectious diseases arising from these fever beds, can you see the probability of any danger to public health from these habitations being surrounded by the flooded waters, that is to say without sewage at all? Undoubtedly great danger, especially in conjunction with the way in which houses are usually built, that is without proper precautions to cut them off from the soil, and also frequently without proper precautions to keep their foundations dry.
223. Do you consider the present condition of affairs a danger to public health? I do.
224. Have you had an opportunity to consider the original scheme as well as the alternative scheme before the Committee? No; I have not interested myself very much in that. It being purely an engineering matter I do not know anything about it. The river backs up and it floods this flat. Flooding the flat is bad for health, I know, but why it backs up—I do not think I can make any remark about that.
225. I notice that in your report of 1888 you do not coincide with the views expressed by Mr. Stayton, who was deputed to make a report there? Yes; I agreed with Mr. Stayton entirely.
226. *Mr. Fegan.*] I suppose that a number of people have time after time pointed out the necessity of something being done to preserve the health of the people? Yes.
227. Round about that quarter has the health of the people improved since Shea's Creek works have been started; is it not a fact that Shea's Creek has materially drained the low land in the vicinity of the creek? Shea's Creek is on the other side of a ridge, and does not flow into that part of Cook's River.
228. Prior to that event had you received any complaints as to the insanitary condition of Marrickville Valley? The year 1888 got mentioned, because it is the date of this report, but I have known this valley ever since I was engaged in public work in the Colony. It was perhaps one of the first places my attention was specially directed to as a particularly unhealthy place.

J. A.  
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229. Has the municipal drain made any difference to the drainage? It has made a difference during fine weather. The channel has been straightened and formed with sheets of iron, and the stuff now flows past where before it used to stagnate.
230. Yet it stagnates in another place lower down the valley? At present it falls into the river above the dam.
231. I mean down by Sydenham-street? It does not stagnate at that corner.
232. Do you know that there are 3 or 4 feet of water on that land at the present time? It is very likely; but I do not know that there are.
233. When that valley is flooded it is detrimental to the health of the residents? Undoubtedly.
234. Do many cases of typhoid fever come under your notice from that locality? Yes, from time to time; but, until comparatively recently, the number of houses really exposed to these conditions has not been very great. When I first made acquaintance with it it was open country; there may have been a house scattered here and there. It is only within a year or two that people have begun to build much on this flat.
235. You do not know much about the proposal to drain that locality? I have read about the schemes. I should not have said just now that I was not interested in them, but I am quite incompetent to discuss their merits.
236. You are deeply interested in the proposal? Certainly.
237. Considering the shallowness of the river, and that at low tide the river overflows its banks and fills the valley time after time, is it possible to have a proper system of drainage in these circumstances, or is it possible to so deepen the river that it will not overflow its banks there? I really do not know; I can only guess.
238. With the river overflowing its banks it is very hard to carry out a system of sewerage? The whole of that area will, in any case, whatever may be done with respect to the river, have to be sewered by pumping. It is below the possibility of connection with the designed sewers. It is sometimes a saving of money to pump instead of making tunnels.
239. Do you know of any place where such sewerage schemes are carried out? Yes, that is the recognised means, I should think, in every big city. There are areas from which the sewage has to be pumped up, and in which it is either cheaper to have a little pumping station for a low-lying locality, or in which you are obliged to do it because the locality cannot be connected with sewers of the grade necessary to serve the greater part of the people.
240. Do you know of any town or city where the pumping system has been adopted? A great part of the sewage of London is pumped; all the sewage of Berlin is pumped. The pumping of sewage is quite a common thing, and at Southampton there is pumping done on a scale which is likely to be adopted here, perhaps.
241. In some cases the pumped sewage is made use of for manure? Yes.
242. That would help to defray the cost of the scheme? That is the theory and the prospect; but I do not think it has ever been realised.
243. What is the area of the flooded valley at Marrickville? I think it is between 100 and 150 acres.
244. This matter has been before you almost ever since you took the position you now occupy? Yes; as a matter very much requiring remedy.
245. *Mr. Roberts.*] Has the Government frequently asked you to report on the state of this locality? The Government have never asked me to report upon it. I have made Departmental reports in the ordinary course of my day's work, and this report of 1888 is one of them.
246. What has been the nature of the request made to you by the Board of Health? Some resident wrote to the Board of Health and said that his house was flooded, or that he found it standing in a swamp, and he thought it was the duty of the local council to drain the land. He had appealed to the local council, who would take no notice of his complaint, or said that they could not do anything, and then he appealed to the Board of Health under the impression that that body had power to compel the local council to do what is necessary. In my early days in Sydney, I used to go and see all these places. In that way I got to know the country.
247. You have made several reports to the Board of Health? I made one or two reports. I have on my table at this moment a complaint similar to that, which I believe originates in the same manner, but I have not yet attended to it.
248. Can you tell the Committee what recommendations, if any, you made to the Board? My statement to the Board for their practical guidance was that the matter was one which required considerable public works to be executed before it could be remedied. Any one could see that the trouble arose in the flooding from the river on the one hand and in the slop waters coming down from the slopes of Enmore on the other.
249. You mentioned all these matters in your report? I mentioned as much of them as I thought necessary to enable the Board to reply.
250. Did you ever find that the people were suffering from illness occasioned by the insanitary condition of the land? No; I do not think that any of these complaints ever were made in connection with illness, although when I have got there the complainants have always alleged that there had been illness in such and such houses which were not far away.
251. When you visited the district did you find much illness prevailing? Unless there is an epidemic I have not the means of visiting the district in the sort of way which I think you have in mind. We have no knowledge of cases of infectious diseases that occur in any district except persons are removed to a hospital, and then I watch the hospital returns, and if I see that a great many persons are coming from a particular district I go into the district and make some inquiry and try to find out what has gone wrong; but on such an occasion as this it would be of no use. I have no source of information except by going from house to house, which, of course, is impossible.
252. I thought from the fact of your being asked to report there had probably been an outbreak of illness, perhaps of typhoid fever? A complaint arose in the fears of the people living on what was practically a swamp, that it would interfere with their health if it was not altered. The fact is they bought their property when the weather was dry, and they thought it ought to be dry all the time.
253. I was anxious to ascertain whether the place had been proved to be almost unfit for human habitation? I do not think there are any means of providing that absolutely, for the reason I gave just  
now

now to Mr. Fegan, which was that the number of houses on this area was quite small and had only lately begun to increase.

254. Do you regard it as an undesirable locality for anyone to reside in? Eminently undesirable. Until the conditions of that locality and other such localities are remedied by execution of the necessary public works, in my opinion there ought to be a power vested in some competent authority to prevent such land from being sold for building purposes.

255. Have you made a recommendation in that respect to the Board of Health? Yes, very often.

256. Are you in a position to indicate which part of the district is suffering most from the stagnant waters? The part which suffers most from the flooding is the part from Marrickville Road down to Cook's River.

257. Do you know anything of the part round Wollie Creek? I have been at Wollie Creek; if I remember aright, because the Council complained of it as a source of nuisance, and wished something to be done to clear it.

258. It is in a very bad state now? It is very much overgrown with weeds, and so on.

259. Do you think that if Wollie Creek and Cook's River were thoroughly dredged it would have a beneficial effect? No.

260. I mean, in addition to other works, such as works to prevent the flood waters from remaining on the land? In that case, yes.

261. Other desirable steps being taken, you think that the drainage of Cook's River and Wollie Creek must have a good effect? I doubt very much whether it is necessary to do anything worth talking of to Wollie Creek.

262. Beyond cleaning it out? No. These are engineering questions. I have never been able to satisfy myself that Wollie Creek was the source of nuisance which it was alleged to be.

263. As regards Cook's River, what opinion have you formed from a sanitary point of view? I did not very often go down as far as Cook's River, but as far as I have observed Cook's River, chiefly from crossing Unwin's Bridge, and occasionally from crossing it at the dam, the river is not a source of nuisance. On the other hand, I know it contains a great deal of foul matter, namely, all that which comes down from the southern slopes which have been mentioned. All that slop water flows in and is confined by the dam. There must be a considerable accumulation of deposit from these slop waters. The water is filthy, but for some reason it happens that I have never smelt anything from that river.

264. Supposing that Cook's River and Wollie Creek were flushed with salt water every day at high tide, would it have a beneficial effect? If by any means these channels could be thoroughly scoured out every day with water, salt or fresh, it would have a beneficial effect.

265. Will you state what remedies should be carried out, without pointing out how they should be done? In the first place intercept the sewage which comes down from the southern slopes I mentioned, and in the second place prevent the waters of Cook's River from backing up over this flat.

266. You think that if works to secure these two objects are constructed, the sanitary condition of the district will be secured? Yes.

267. You think that a scheme to prevent Cook's River from over-flowing on to these low lands, and to intercept the drainage from Sydenham Road down to a point south of the Burwood Road, would be a scheme worthy of favourable consideration? Yes; I think it would do all that is necessary to turn that valley into a site on which healthy houses could be erected.

268. You expressed your regret that there is no power to prevent the people from building in such unhealthy places? What I intended to express was rather regret that there is no power to prevent the putting up to auction and sale of such land until provision has been made for draining it and keeping it dry. I do not mean sewerage, but land drainage. It is the proprietors one rather wants to get at.

269. I suppose that sometimes these lands are sold in times of drought, and the purchasers do not discover the unhealthy character of the situation until we have copious rains? Yes; until after they have built upon them.

270. Then they find themselves living in houses altogether unfit for human habitation? Yes.

271. *Mr. O'Connor.*] The carrying out of this scheme would not only be advantageous to Marrickville but, without becoming a national one, would be equally beneficial to the adjoining municipalities? An unhealthy inhabited area is a source of danger, more or less, to every adjoining area.

272. *Mr. Clarke.*] Having seen the plans of the two schemes, can you express an opinion as to which scheme would be the better one for the district in the public interest? I do not think I could. I think I should approve of any scheme which will answer the intended purpose; but as to how that scheme is to be carried out is not for me to speak upon; it is an engineering question.

273. Do you think that if either scheme were carried out in a proper manner it would prevent the sewage from spreading over the low lands and the flooded waters from submerging those lands in flood time? I do.

274. Unless the nuisance of the sewage and of the flooding of the lands is abated it would be almost unnecessary to go on with these works? The first thing to be done is to make the area healthy.

275. Is there not a large population in the neighbourhood of Marrickville and all down near the dam? Yes.

276. It is absolutely necessary in their interests that something should be done to prevent this nuisance? Yes.

277. Are you aware that a sewerage scheme is being carried out in Marrickville? Yes.

278. Until these works are executed that drainage scheme will be of very little use to the public to prevent this nuisance? Flood waters are unhealthy, and if the lands are flooded with the ordinary water which comes down the river it is bad enough; it may be a little worse if they are flooded also with slop waters.

279. From your experience of this locality you think it is absolutely necessary that either these works or other works should be completed as soon as possible? Yes.

280. *Chairman.*] Marrickville Valley in your opinion receives the stormwaters discharged from a number of municipalities? Yes.

281. That stormwater discharge requires to be dealt with in some way? Yes.

282. Cook's River also receives the flood waters from a number of municipalities? Yes.

283. Virtually it is the stormwater discharge for these municipalities? Yes.

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Thompson,  
Esq., M.D.,  
D.P.H.

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- J. A. Thompson, Esq., M.D., D.P.H.  
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284. It requires to be dealt with also, but, not being an engineer, you do not say how? Yes.
285. With regard to the sanitary condition of Wollie Creek you are doubtful? Yes. I have never satisfied myself that it is a source of nuisance, but other people have said so.
286. Is it the stormwater discharge for various municipalities or for any area? I do not quite know how far back that creek extends.
287. Can we briefly summarise your evidence in this way with regard to the condition of Marrickville Valley and the vicinity of Cook's River—you have no doubt that it is insanitary and that the responsibility does not rest only on the lands adjacent and that the evil is created by other municipalities in some instances far removed? Yes.
288. Do you desire to add anything to what you have said? I cannot think of anything.

John Moore Smail, Esq., Engineer-in-Chief, Metropolitan Board of Water Supply and Sewerage, sworn, and examined:—

- J. M. Smail, Esq.  
26 June, 1896.
289. *Chairman.*] What is your official position? I am Engineer-in-Chief of the Metropolitan Board of Water Supply and Sewerage.
290. You are in control of the Departments dealing with the sewerage of Sydney? Yes. Under the Government and the Board.
291. Do your operations extend to Marrickville Valley, and to the lowlands under the consideration of this Committee? The construction of the sewerage works has not extended that far yet.
292. Have you any stormwater channels in connection with that valley? No.
293. This area has not yet received the attention of your Board? No, we are proceeding with the works now.
294. What works? The sewerage works which will intercept the sewage flowing into Cook's River. We do not deal with stormwaters.
295. Will you be able to intercept all the sewage which now reaches Cook's River? Eventually.
296. The stormwaters you will not be able to reach? It will be a separate provision.
297. Does sewage reach any portion of Marrickville Valley? Yes.
298. Will you be able to intercept that sewage? The whole of the sewage which flows down the valley into Cook's River, and which is causing the nuisance, will eventually be intercepted under the present scheme.
299. When you say that it will be "eventually intercepted" what do you mean? Within two years I should say 40 per cent. of the present contributing Marrickville area will be intercepted, and within five or six years I should say that the whole of it will be intercepted.
300. As regards the proposal before the Committee we can dismiss the sewage question? Yes.
301. Therefore it becomes a stormwater question? Purely.
302. For all time will certain municipalities discharge into Cook's River as the best stormwater outlet, and, if so, what municipalities? I should say there would be Marrickville, part of Petersham, Newtown, and St. Peters.
303. Is Cook's River naturally a stormwater discharge for these municipalities? It is.
304. And will remain so? Yes, for the Marrickville side. A portion of St. Peters will go into Shea's Creek.
305. What municipalities will Cook's River remain a stormwater discharge for for all time above the dam? Wollie Creek watershed will take portion of Canterbury and Hurstville; Cook's River watershed will take part of Marrickville, part of Newtown, portion of St. Peters, and a very small portion of Petersham.
306. Supposing sewage were dealt with, would the stormwaters coming down the valley and Cook's River create an insanitary state of things above the dam? There would be a certain amount of sewage. What we call the first shedding of the rain brings from the streets and the yards horse manure, which cannot possibly go into the sewers. It is bound to set up in the long run a nuisance, but comparatively speaking at the present time there will be no nuisance. Comparing the river in the future with all the real sewage out of it, and the river at the present time, there will be no nuisance when the sewage is all intercepted.
- 307-8. Would it or would it not? I must make a comparison, because at the present time it receives all the sewage and everything else. I do not wish to mislead the Committee. If the river did not get naturally flushed by rains with even stormwaters going into it, it would cause a nuisance.
309. There will still be a liability to an insanitary state of things with the discharge of stormwater only above the dam? There is a liability.
310. Are the stormwater channels paid for by the municipalities which use them? Yes, in this way; we never carry out any stormwater ducts unless they can prove adjuncts to the present sewerage system. Drainage areas are taken out and every one within the drainage area is charged a drainage rate, that is a certain rate fixed by Parliament on the value of the property; but when the sewerage system is carried out the drainage rate merges into the sewerage rate—only one rate is charged. All stormwater channels which are considered adjuncts to the sewerage system form part of the general system.
311. In carrying out any stormwater discharge you see that it fits in with your general scheme? Yes.
312. Have you considered the best way to discharge the stormwater from the Marrickville Valley? I dealt with the question in 1885 and 1886.
313. In what way? At that time there were two alternative schemes. When Mr. Bennett was the Commissioner he recommended something very much on the lines of the scheme which has been referred to this Committee by the Legislative Assembly. I found by taking levels that some portion of Marrickville Valley near the Burwood Road railway was 2 feet below high water. The question was how to get that water down into the river. When the river was in flood the dam was the crux of the whole thing. The water could not get away notwithstanding that provision was made for sluice-gates. I have seen half a dozen boats floated up against the sluice-gates in flood time. When reports were made, Mr. Bennett wrote a minute—which I think is in Mr. Darley's *précis*—in which he pointed out that it was necessary to make some provision for widening the sluices and taking this bridge away. It would give Cook's River a clear flow out, that is after the new works were carried out. The conditions of Cook's River at that time were quite different from what they were prior to 1885. It was then proposed to dam across Marrickville Valley, but after consideration we found that to get this portion dry we should have to pump it. The whole thing resolved itself into either a gravitation scheme or a pumping scheme. After looking at these plans, as an engineer, I should say that I prefer the gravitation scheme.

314. The alternative scheme is to your mind the better scheme in that you get a better flow for the water? A better get-away for the water. The object of the dam is to prevent the water in flood-time from getting into Marrickville Valley. It would become necessary to find some outlet for the waters that will come down from the uplands into the valley. This outlet would either have to be by pumping or a gravitation scheme, and of the two, as an engineer, I would prefer the gravitation scheme. J. M. Smail,  
Esq.  
26 June, 1896.
315. Do you recognise that as most of the lands to be drained are not more than 2 or 3 feet above low water, your gravitation scheme must work intermittently? I admit that. The alternative scheme shows the invert of the outlet to be 1 foot below low water. The invert of the inlet is at low water, consequently there is only one foot fall for the whole length. When it is neap tide, the outlet must be partially tide-locked, consequently if a heavy rainfall happens to come concurrently with a high tide the water would not get away so quickly as it would if the tide were low, but that is a condition that you will find in all seaboard discharges, where you are confined by the tide. In Blackwattle Valley I had to deal with a place, not so large in area as Marrickville Valley, and all the fall there was between high water and low water. You can understand that when it comes high tide the mouth of the sewer is partially tide-locked. But since the larger sewer has been put in we have never had any complaints of flooding.
316. Was the land you were dealing with on a level with high water? Some of the land was 2 feet below high water. It was a case almost similar to this one, only that the area was different, and the streets being paved and metalled, the water used to come down very much faster on to the low land than can occur in this case. Here with so much open ground a portion of the rainfall will naturally be absorbed in the ground and will not get to the outlet.
317. Does this stormwater proposal differ in any way from other stormwater proposals to which the whole of the interested municipalities contribute—is there any local reason here which we should take into our consideration? The stormwater proposals we have been accustomed to deal with are generally considered adjuncts to the sewerage system, consequently there may be two or three municipalities in one drainage area, and we assess the whole lot of them. But in this case I do not see that it would be a charge upon the revenues at all, because it cannot be considered an adjunct to the sewerage system. If in the future, when the levels come to be worked out, it, or any portion of it, can be utilised as an overflow from the foul water sewers into Cook's River, then, of course, the Board will have to pay their quota of the cost.
318. Eventually you will require to deal with the stormwaters in that vicinity? Yes; the map shows where the main sewer passes on its way to Botany sewage farm. Any stormwater sewer carried out in connection with Marrickville Valley, as far as I can see yet, cannot be worked into the western suburban sewerage system.
319. Why should it not still form a portion of that system? Any stormwater sewers which cannot be worked as adjuncts to the sewerage system the Government or the Board throw upon the municipal body to carry out. Unless it could be worked with the sewerage system it would be illegal to pay for the work; under the Act we could not strike a rate.
320. Under the Act is it a fact that unless a stormwater channel may become eventually an overflow channel it cannot be charged upon the rates gathered for such purposes? It cannot be charged to the sewerage rate.
321. Could such a stormwater channel as is now proposed become an over channel? I do not think it would be of any use whatever to the western suburbs sewerage system; every day we are refusing applications to carry out stormwater channels, simply because we cannot work them in with stormwater ducts. Since my examination began I have received some information for which I telephoned to the office. Out of the 1,800 acres that comprise Marrickville Valley, the Board are now dealing or have dealt with the reticulation of 1,000 acres. Within twelve months 1,000 acres will be reticulated, and the sewage will be intercepted from Cook's River, so that I was quite within the mark when I said that it would be done within two years.
322. *Mr. Roberts.*] Will you indicate which portion of the land you refer to? The southern portion of Newtown, the upper portion of Marrickville, that is in connection with the eastern branch of the western suburbs sewerage system.
323. Will that work be carried out within twelve months? To be on the safe side I will say eighteen months.
324. When will the remaining 800 acres be dealt with? A good deal of that comes from the low level system, which will be a pumping scheme. I will say six years for the rest of the scheme.
325. The whole of that valley will be dealt with within six years? I believe it will be done sooner.
326. Have you made yourself thoroughly acquainted with the two schemes before the Committee? Yes; No. 1 scheme is an old scheme which I have known since 1890.
327. Which scheme do you prefer? Really to make Cook's River a sanitary river the dam ought to be taken away to the extent shown on the map and having a good outlet. Whether you construct the alternative scheme or not a certain amount of work must be done at Cook's River to prevent the water getting back.
328. Will Marrickville dam prevent the water from getting back? Assuming that it is built it will prevent the flood-waters of the river from getting into the valley.
329. That is a portion of the alternative scheme? I take it to be so.
330. Do you think the alternative scheme as submitted at a cost of £25,000 will prove thoroughly effectual? It will prove as effectual as you can possibly get it in the circumstances. I do not say that the water will run off as it will off a paved street. From my experience of the place, where the water now lies for months I may say that if you carry out that system it will lie there for only hours.
331. Can you suggest any improvement in the alternative scheme? No; I think they have adopted the best line they could possibly adopt. I have not gone into the calculations as to the size of it and so on, but as regards the general line and the general principles, I think it is the correct thing. They have got down to the lowest level, and they have got the best discharge, and I do not see that any engineer can improve upon that.
332. You think that something further ought to be done with the dam? Yes.
333. It is contemplated to lower the sills; do you think anything more should be done? I think they ought to widen the sluice as well.
334. You favour the dredging operations which are contemplated in Wolli Creek and Cook's River? It is very hard to find Wolli Creek.

- J. M. Smail, Esq.  
26 June, 1896.
335. Is it in a very bad state? You could not see it; but for the few piers which carry the sewer across you would not know Wolli Creek from the surrounding ground. It is full of rushes and other things. It is all silted up to just a little dribble. It used to be a fine creek years ago.
336. *Chairman.*] What silted up this creek? I think the dam had a lot to do with it. It is in a great measure answerable for all this nuisance.
337. *Mr. Roberts.*] Do you favour the construction of that tunnel as suggested by Mr. Darley 15 feet wide and 6 feet high? I certainly favour the idea of constructing a tunnel, but as to whether its dimensions are correct, I should not like to give an opinion. There is no doubt that the principle is correct. With the tunnel it will gravitate from the Marrickville Dam back to the inlet, and also intercept all the water from the up lands, provided the borough councils will make inlets to the tunnel.
338. There is no doubt in your opinion that the water will gravitate from the Marrickville Dam to the tunnel? Certainly not. It will gravitate with the very slight fall it has now.
339. The ground falls that way? It is practically level. There may be a difference of a few inches. The part tinted red on the map is absolutely lower than a portion near the dam.
340. You think there will always be some trouble there? There will not be any trouble, because the tunnel will be at low water, and that is 2 feet below high water. That will give a 4-feet fall down to the inlet.
341. You think the tunnel will effectually carry off the waters coming from the direction you indicate? I think so. In my answers I am always keeping in view that the principal question is gravitation *versus* pumping.
342. Have you read Mr. Darley's explanation of his proposal? I have glanced over it. From my knowledge of the district I think he has very happily hit upon the solution of the difficulty.
343. Assuming that the alternative scheme is carried out, what work would be required to be done by the local council to make the place as perfect as possible? The local council, I think, would have to reverse the fall of the drain from Marrickville Dam—that is the drain made out of Hudson Brothers' pipes—right back to the inlet for the tunnel. I do not believe there is more than a 3-feet fall from one point to the other. The expense of lowering that would not be very much.

TUESDAY, 30 JUNE, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).	
The Hon. CHARLES JAMES ROBERTS, C.M.G.	HENRY CLARKE, Esq.
The Hon. DANIEL O'CONNOR.	JOHN LIONEL FEGAN, Esq.
FRANK FARNELL, Esq.	

The Committee further considered the proposed Improvement of Cook's River.

Richard Watson Walker McCoy, Esq., Mayor of Marrickville, sworn, and examined:—

- R. W. W. McCoy, Esq.  
30 June, 1896.
344. *Chairman.*] Are you aware of the scheme that was submitted by Parliament to this Committee? I am.
345. And of the alternative scheme? I am.
346. Do you desire to make a statement with regard to the matter? Yes; I desire to say that I have taken the voice of the whole Council, and they have unanimously expressed their opinion that Mr. Darley's original scheme is the one they would like to see carried out.
347. Are you prepared to inform the Committee the reasons for that? There were no reasons expressed. The matter had been considered from time to time.
348. You desire to see the drain brought right down Marrickville Valley rather than taken by a tunnel and channel to the mouth of Shea's Creek? Yes.
349. *Mr. Clarke.*] Would you be kind enough to state under what disability your municipality labours under the present system of the low lands being flooded? By reason of the dam which now exists the river has from time to time become silted up, and now, near the dam, there is scarcely a channel left, and at times the result is certainly dangerous to health, and the river, which was once a pleasant resort, is now a place to be avoided. This has been occasioned by the silt from time to time coming from the various municipalities, and down Wolli Creek. The deposit is there, and the river, as can be seen at any moment, is almost silted up.
350. What was the cause of that silting-up? I think that if the dam had not been placed where it is the silting-up would not have taken place.
351. But has not the dam been there for many years? It has; but the silting has been of gradual growth.
352. I think I remember the dam being there fifty years ago;—is there any nuisance caused besides the overflow of the waters over the low lands, through drainage or sewage, or any other offensive matter remaining there? Yes; at times there is certainly a very great nuisance. The smell, in summer-time particularly, we have found is very troublesome, and probably likely to cause a great danger to public health.
353. I suppose you have been from time to time asking the various Governments in power to remedy all those defects? From time to time we have.
354. But this is the first occasion, I suppose, when anything has been proposed to be done to obviate the difficulty? The first time anything definite has been proposed; but on several occasions the Minister has told us that something ought to be done, and that if he could do it for a reasonable sum of money he would see it was carried out. But the thing would then be delayed, and we would go again and find it was not carried out. Nothing has been done, but finally a scheme has been propounded and sent to this Committee. We have had promises from time to time that something would be done, if it could be done with a small outlay.
355. You think that this is a matter that ought to be done entirely at the expense of the public? I do. Cook's River is a natural watercourse.
356. Can you give us any instances of where similar work has been done in other municipalities? I do not know that a like work has been done in other municipalities; but there has certainly been similar work

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work on some rivers. I think that the work at White Bay, Balmain, and at Darling Harbour, was done without a betterment tax being applied. I think that a similar work has been carried out at Rozelle Bay, Balmain; and as far as my memory serves me, there has been no betterment tax levied on those districts.

357. Then you think that the Municipality of Marrickville, or those interested in this scheme, should not contribute anything towards its cost? I do not think they should.

358. You have stated already that you approve of the original scheme submitted by Mr. Darley, which would cost £36,400? Yes.

359. Can you give any reason why that scheme should be adopted in preference to the alternative scheme which he now submits? I believe that is a matter more for engineering evidence. I have my own ideas on the matter, but they are based only on what I have gathered from engineering evidence. My opinion with regard to the alternative scheme, from what I have been informed as to the tides, is that at high tide the flood-gates would of course have to be closed. In flood-time the water would then have no means of escape, and would flood a certain portion of Marrickville which at present is very rarely flooded.

360. But I think we have it in evidence that it would only be for a short time? For a few hours probably, until the tide went down, but still that water is 2 or 3 feet deep, and it would be sent over ground which is comparatively free from it at present, and a certain amount of danger would also ensue to the people living in that locality. Moreover, Cook's River, of course, is a natural outlet.

361. The flooding of the low lands was not such a cause of nuisance when the population in the neighbourhood was small? It was not felt to so great an extent then of course. The general increase of population throughout the whole district has probably made it felt more not only in Marrickville, but in the surrounding districts.

362. From what I have seen of the low lands, I think that houses should never have been built there? Many of us think the same.

363. But people have gone there, and cannot be prevented from doing so? Unfortunately, I believe, that happened in a very severe drought.

364. It happened, I suppose, in the boom times? There were a number of years when rain was very scarce, and I believe that low land then was very dry, and people were foolish enough to build there.

365. Well, those people who were foolish enough to build there in those times, do you not think that they should contribute something towards the expense of this work, they having gone there of their own accord? If the low-lying lands are perfectly drained, and those properties immediately in the vicinity are benefited thereby, I do not think that anybody could reasonably object to those properties being taxed for that purpose, but the actual cleansing of Cook's River is a different matter. The work on the river is, I think, a national work, and I do not think that those people should be taxed for that. I do not think that the people getting a benefit from the draining of the low-lying ground would complain of being called upon to pay a small tax for that, but the question should be divided into two parts, one affecting the river and the other the low lands. The work on the river would be a national work.

366. The alternative scheme would cost only £25,000, as compared with the original scheme to cost £36,400? Yes, but it would still leave the nuisance coming from Wollie Creek, which is a very great nuisance.

367. Would not the dredging in Wollie Creek obviate that difficulty? It would remove it temporarily.

368. I suppose that the obstruction of Wollie Creek is caused by rushes and similar things? Yes, it is; and it is pretty well silted up at the mouth.

369. The difference between the cost of the two schemes is £11,000? Yes.

370. But on the whole, you consider that it is absolutely necessary to have the drainage as proposed in the original scheme? I do.

371. You also think it is absolutely necessary for Marrickville and the neighbourhood that this work should be carried out? I do.

372. Entirely at the cost of the public? Yes, so far as the actual dredging of Cook's River is concerned; but if there could be a division of the question, I think it might probably be fair that a small proportion of the people should be taxed in connection with the drainage of the low-lying land. However, as to the cost of work on the river, and in connection with the river, I certainly think that the people should not be asked to contribute anything towards the cost.

373. You have mentioned several places where you believe that works of a similar character have been carried out at the expense of the country? Yes.

374. I suppose you are aware that flood embankments have been made at West Maitland, on the Hunter River, and you think you are as much entitled to have such works near Marrickville as the people near West Maitland are? Yes; I think we are equally entitled.

375. You are contending for uniform treatment? Exactly.

376. *Mr. Egan.*] What is the population of your municipality? About 20,000.

377. I understood you to say that a great deal of the flooding is caused by the dam which the Government have constructed? Yes.

378. If that dam were removed, what would be the consequence to the municipality? If the dam were simply removed, and nothing else were done, the probability is that the result would be disastrous, for the water would rush in and probably flood lands not now flooded.

379. The objection that you raise as far as the dam is concerned is that the nuisance would be a great deal worse if the dam were taken away? If the dam were taken away, I believe it would be worse if nothing further were done.

380. Part of the flooded area is a portion of the old Warren Estate, is it not? Yes.

381. How many acres of the Warren Estate do you think are liable to be flooded? I could not say how much of the Warren Estate, but I suppose there are a couple of hundred acres altogether which suffer from flooding. Our engineer will be able to furnish a more accurate statement than I can on that point.

382. I suppose you know that the Government have recognised their responsibility so far as Cook's River is concerned? Yes; they have promised to do work from time to time.

383. I understood you to say that your Council came to a decision that Mr. Darley's alternative scheme was useless to you, and, therefore, you preferred the first scheme? I did not say that. What I said was that they unanimously agreed that the carrying out of the original scheme should be obtained if possible. I was then asked a question in regard to my opinion concerning the alternative scheme, but there were no reasons given by the Council.

- B. W. W. McCoy, Esq.  
30 June, 1896.
384. No reasons given? No; but the matter has been under the consideration of all the aldermen for years past.
385. But, as a business man, do you not think that it would be well to give reasons why you are against the alternative scheme? I gave one reason personally.
386. But I mean as representing the Council;—if a body of men representing the interests of the rate-payers come to a decision, it is only natural that this Committee should want to know why they came to that decision? We have to a great extent come to the decision on the advice of our engineer. He is here, and will be able probably to deal with that question better than any of the aldermen.
387. But the aldermen, and not the engineer, are responsible for the conduct of business in your municipality? Yes; but we call for reports, which he makes for our consideration.
388. But you have the right to adopt or reject them? Quite so.
389. I ask you the reasons given for adopting his report—that is, preferring Mr. Darley's original scheme to the alternative scheme? We thought that the larger scheme would be more effectual—that it would do away with the Wolli Creek nuisance entirely, which, we understand, causes a great deal of the nuisance now existing in the river between the Illawarra Road and the dam. Moreover, the alternative scheme would, I believe, flood lands at certain times and do a certain amount of damage to property which at present would not be affected by a heavy rainfall.
390. And considering the two costs—£25,000 and £36,000—you think that taking the small difference, £11,000, into consideration the original scheme is the preferable one? I do.
391. It would give a better sweep for the water? Certainly, and would also widen the channel.
392. And be the means, I suppose, of taking the silt with it as well? Yes. The bridge which is proposed would, of course, allow the water to come in and probably act as a scour up to the dam now proposed to be erected at Unwin's Bridge. If the present dam is removed there will be a scour up to that point.
393. Are there times when that water comes over the embankment? Yes, there are times, but they are very rare.
394. During the last rains did water come over? I think not.
395. Have you much sickness about this flooded part of the district? I cannot say that we have; it is not closely built upon.
396. Your municipality would not have any objection to have the cost of whichever scheme was carried out added to the general sewerage scheme? I do not know that the matter of Cook's River could be added to that.
397. I mean apart from that;—the dredging expense the Government are willing to undertake at once, I understand, but I mean the draining of the flats? Well, so far as that is concerned, I think it would be fair to tax in some way the people whose pockets were actually benefited; but that is, of course, only to the Tram Vale flats. That was a matter entirely outside the original Cook's River dredging movement.
398. But do you not think that the higher portion of your municipality is to a certain extent responsible to the lower portion so far as the drainage is concerned;—you have no complete system of drainage yet? No, not complete.
399. Therefore, the higher portion of your municipality is responsible to a certain extent to the lower portion—I mean as far as the drainage is concerned? Of course, the drainage must come from the higher to the lower portion. But it is not the drainage that causes any nuisance immediately.
400. But you say that at the present time you have not a perfect system of drainage? It is not a perfect system.
401. Therefore, when you have heavy rains the water will naturally flow from the higher to the lower portions of your municipality? Yes.
402. If you had a proper system of drainage a great deal of that water would go into the regular system of drainage, would it not? Yes.
403. Therefore, is it not fair to ask that the other portion, with the exception of the dredging of the river, should be added to the general drainage system? When you speak of dredging of the river, what do you really mean.
404. I mean the deepening of the river as proposed—"dredging full width of channel, 5 ft. deep up Cook's River to Undercliffe, and up to Wolli Creek Dam, £5,000"? But the removing of the dam is also river work, and the new timber bridge is river work, also the temporary bridge, the training walls, and the fascine banks.
405. If the Government see the necessity of doing part of the work it is only fair to ask the general sewerage system to bear its share;—I think you are in favour of that, are you not? If it is a matter of draining Tram Vale, I think there should be a fair distribution of the tax upon those whose properties are improved, but if it is a matter of the improvement of Cook's River—and I take this to be a matter almost entirely of the improvement of Cook's River—I do not think that the property-owners should be asked to contribute.
406. But you admit that a great portion of the surface waters from the heights of Marrickville finds its way down to the flats of Marrickville? Yes.
407. Therefore, you must be responsible for that; you cannot expect the Government to prevent that, can you? Of course, so far as the high ground of Marrickville is concerned, it also affects adjoining municipalities. It comes across from Petersham, Newtown, and all round.
408. Therefore, I ask should not part of this expenditure be added to the general sewerage system;—you get a great deal of surface water from Petersham and St. Peters and Newtown, and if part of this expenditure were added to the general sewerage system, that would lighten the burden on the people of Marrickville as well as the proposal that is before us? Certainly.
409. You have no objection to that, have you? I take it that the expenditure of this £36,000 will not by any means relieve merely Tram Vale, and is really for the purpose of putting the river in a proper state, and keeping it clear. Therefore, I think that to charge the people for what really would not be done for them would certainly be imposing an unfair tax upon them.
410. How much has your municipality spent in trying to get rid of the water in the lower portion by drainage? We have spent a large amount of money. We have an open drain there now.
411. What was the cost of that? I cannot say; it has been there many years.
412. I suppose that is fairly silted up now? There is a certain amount of silt in it, and the drain will probably require renewing very shortly if something else is not done.
413. Renewing and making deeper? Yes.

414. Do you not think that the general sewerage system should bear portion of this expenditure? I cannot see which portion could be fairly applied to it.

415. You have a certain amount of private property there, have you not—the Warren and other estates—which could afford to bear a share of the expense? I have not entered into the matter of who could afford to pay. The question is whether it is a fair and reasonable charge to make, not a question of whether the people have or have not reasonable means. We do not think it is a fair charge to make upon them.

416. If this work is carried out as proposed—either the first or the second scheme—will it enhance the value of those people's properties to any extent? I certainly think that if Cook's River is put in the state in which we are anxious to see it, the whole of the surrounding district, and consequently those properties, would be improved.

417. And do I understand that you are asking the Government to bear the cost of making other people's property better without those property-owners coming to the assistance of the Government? I am asking that, because we are only asking that Cook's River should be placed in the position it should occupy as a natural water-course of the Colony.

418. *Mr. Farnell.*] Are any other municipalities besides Marrickville concerned? Yes, ten or a dozen—Hurstville, Arncliffe, Rockdale, St. Peters, Newtown, Petersham, Canterbury, Ashfield, and Enfield.

419. Would all those districts, forming as it were a water-shed, be responsible for the accumulation of these flood-waters? Yes.

420. In regard to the discharge of sewage, which municipality's sewage matter passes through Marrickville? That of Petersham and Newtown.

421. Are you aware of any proposal having been made by the Water and Sewerage authorities to relieve the different municipalities of the grievance they have as to the accumulation and discharge of sewage matter from the different localities? There is a scheme now being carried out which, when completed, will be of great service to the municipalities. That is the only scheme I know of.

422. When the sewage nuisance is combated I take it that your complaint then would be as regards the damage done and the danger to health likely to arise from the accumulation of flood-waters? Yes, if the sewerage system is completed; but we have to look forward to a very long time. That which was to have been done in three years has taken six or seven years already, and we have to base our calculations for the future on the same ratio.

423. And you ask that some temporary relief may be given in conjunction with the scheme for dealing with the flood-waters? Yes.

424. You consider, then, that independent of the accumulation and distribution of the sewage matter which may contain germs of disease, there would be danger to the public health from allowing the storm-waters to remain and inundate that land? Certainly. Even with storm-waters there is always a certain amount of matter which, if it stands for any length of time, becomes dangerous to health.

425. And while you think that some advantage would be gained by the people who own those areas of land that become inundated owing to the accumulation of flood-waters, a national benefit would also arise by removing a nuisance, and having properly discharged the flood-waters from those municipalities which form the water-shed and run their water through that area? Certainly.

426. Has this matter received much consideration at the hands of your Council? Yes; it has been under the consideration of aldermen for years past.

427. And I understand that the municipal council did make an attempt to cope with this difficulty, but it has not proved sufficient to combat with the nuisance? No; it has given relief to a great extent, but nothing short of a comprehensive scheme will really be effectual.

428. It has improved the condition of affairs which existed some years ago? Yes, the condition of affairs is better than it was.

429. You have some defined channel, whereas years ago there was simply a chain of marshes and quagmires? Quite so.

430. In connection with the alternative scheme, if Shea's Creek is dredged and deepened, and in connection with the original scheme, if Cook's River is dredged, and the Departmental proposal is carried out so far as Cook's River is concerned, do you think that will meet the difficulty? Certainly.

431. I think you stated that you do not know of any cases that had actually come under your notice where disease had been contracted through the accumulation of this sewage matter? Personally, I know of no cases which could be directly attributed to it.

432. But there can be no doubt there has been sickness in the district? There has been a certain amount of sickness there, and the wonder is it has not been greater. It is a sort of surprise to us, because when we go there we are always glad to get away from the place. It must do a great deal of harm, although the individual cases do not come under our notice. We are anxious to prevent what may be a very serious danger.

433. Do you think that any advantage would accrue to the Government other than relieving the municipalities concerned if Cook's River and Shea's Creek were dredged sufficiently to make them navigable at all tides? I think it would. It is very noticeable the difference in the number of travellers to and from Cook's River. Ten years ago at holiday times and on Saturdays and Sundays you would see Cook's River alive with boats. I admit that is a very small question compared with the necessity of giving us a good healthful resort and waterway, but I have seen the river crowded with boats, whereas you scarcely ever find a boat on it, though there are boat-sheds there.

434. Do these flood-waters generally do much damage to adjoining municipalities? I have no knowledge of the extent of the damage to adjoining municipalities.

435. It would not be likely that the adjoining municipalities would join in paying any portion of the expense supposing they were asked? I can speak for eight or ten of the municipalities. I know that in conference they have said that they thought it was unfair they should be charged with any tax for the improvement of Cook's River.

436. *Mr. Roberts.*] How long have you been Mayor of Marrickville? Only this year.

437. And an alderman for how many years? This is my third year; but I had resided there for fifteen years.

438. And consequently you have an intimate knowledge of the district under consideration? Yes.

439. When you joined the Council was this question one of prominence in debate amongst the members of the municipal body? It has, ever since I have been in the Council, been a matter for constant reference.

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440. Could you describe the insanitary condition of the municipalities;—I want you to explain on what ground you are asking the Government to take up this work? I am not here to-day to say that our borough is in an insanitary condition. I should be very sorry to do the district that much damage. On the contrary, I can say that, as a municipality, it is a very healthy one, and I wish to say that with emphasis; but I do say that there is a great nuisance caused on Cook's River, which is very dangerous, and I fear that if something is not done a very serious outbreak may be the result.

441. What I wanted to know was whether the municipality was asking the Government to carry out this work, or something which would have a similar object in view, on account of the danger which exists to public health by reason of the insanitary condition of those areas? We realise that it must be a menace to the public health, and it is our duty to try to prevent distress and disease rather than to move after the damage has been done.

442. But up to the present time no sickness of any magnitude has exhibited itself in the municipality? No; I do not think there has been any extraordinary amount of sickness. In fact, I think we have a healthy municipality; but we are anxious to keep it so.

443. Would you explain what nuisance it is that exists which you want remedied? Certainly. The river in its present state is a danger to anybody in the vicinity. It is silted up, and I have been informed that there are certain evidences there of the very worst kind to be found in the worst stagnant waters. I cannot speak from my own knowledge. It is only what I have been informed by those who know about these things, and who say that it is really little better now than a cesspit between the Illawarra Road and the present dam.

444. Can you tell the Committee how many people are affected by this nuisance? It is very hard to say. I have heard complaints made by daily travellers on the Hurstville railway line. As they pass in the train, they are greatly inconvenienced by the smell. I have had numerous complaints. I have had the Mayor of an adjoining municipality speaking to me about it, and numbers of other people, who say that in summer-time the smell rising as they pass through is unbearable. So it is very hard to say where the thing may end, there are so many travellers on that line. Then there are other travellers through our borough from Canterbury and Belmore crossing the river. Of course there are not many houses built on the banks of the river or near the water.

445. What do you think is necessary to be done in order to abate the nuisance that at present exists? That is a difficult engineering question, but first of all we are anxious to see the river dredged.

446. You want to see the waters of Cook's River prevented from flooding the Marrickville Valley? Yes; we want the river dredged and a proper channel made, but how these things should be done is a matter for your engineers to decide, and I understand that it has given them considerable trouble to work it out.

447. I think you told the Chairman that you had made yourself acquainted with both schemes submitted by Mr. Darley? Yes.

448. And if you look carefully at the alternative scheme will you not admit that it carries out most of these suggestions that you have just mentioned? It would certainly relieve the low lands to a very great extent.

449. There would be a tunnel and drain to Shea's Creek? Yes.

450. Do you not think that would have the effect of draining the whole of the Marrickville Valley? I could not very well say the extent of ground a certain tunnel would drain, but in my opinion it would not drain the whole of the valley.

451. That is one of the objects you have in view? Yes; it is one of the objects.

452. If the construction of that tunnel and drain to Shea's Creek will have the effect of draining the whole of the Marrickville Valley, that is one of the objects you have in view? If it will have the effect of draining it without putting us to any extra inconvenience or risk, and if we can get the river put in a proper condition, then, of course, we would be satisfied; but our anxiety is about the river, because the other is not causing us any more inconvenience, but the condition of the river is, we think, a menace to health.

453. Then it is contemplated to put a dam across the Marrickville Valley the object of which is to prevent the waters of Cook's River from flooding the valley—that would meet your approval? Yes.

454. Then there is an item of £4,000 for dredging Cook's River and Wollie Creek—that is a necessary work? Yes.

455. Then there is the lowering of the sills at the Cook's River Dam—that must be done? That must be done if the original scheme is not carried out.

456. I have mentioned those four items;—can you tell the Committee what other work you think ought to be done? You want to continually dredge unless the dam is removed; but if the dam is removed probably the tide will act as a scour.

457. I was endeavouring to get you to see that I thought that if those four works, the carrying out of which means the adoption of the alternative scheme, were carried out they seem to do all the work which you yourself, as representative of the Council, ask for, and, if they do, I wanted you to show me what advantage it would be to spend another £11,000? I think I mentioned that it does not provide for putting the river in the state it was formerly in. It only provides for dredging, but according to the big scheme we are to have certain resummptions which will give the river its full width, and will place it in the position in which it was originally. Now it is silted up to such an extent that it is quite a narrow little stream.

458. But does it not strike you that if that scheme were adopted the salt water would be allowed to flood certain portions of private land there which are entitled to a fresh-water frontage? I do not know that they are entitled to it.

459. I understand that you look upon this more as a national work—a work for the Government of the country—instead of being a municipal work? I do. It is truly not a municipal work, for the simple reason that it is outside the municipal area. Our boundary is the bank of the river, and we cannot expend one shilling outside of the municipality. The river is a national waterway, and the Government are the only people who can control or who are entitled to spend money upon it.

460. But supposing that the waters of Cook's River were prevented from going on to the Marrickville Valley, you would be able to deal with any drains that might be necessary then? I would not like to say that we could.

461. I mean necessitated by a heavy rainfall? We might cope with a heavy rainfall perhaps if we had a complete sewerage system, but we do not know when we may have that.

462. Well, we have had it in evidence here that a portion of it would be in operation within eighteen months, and I think the balance in about 6 years; you base your claim that the Government should carry out this work on the ground that it is similar to the carrying away the flooded waters in connection with the Hunter River where money has been spent to get rid of flood-waters? Quite so.

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463. Can you mention any works of an exactly similar character that have been carried out in the Colony in regard to which no special taxation has been imposed? Not of exactly a similar character; but I think there have been works on the various rivers from time to time which had undoubtedly the effect of benefiting surrounding property, and no such thing as a betterment tax has ever been heard of. Here, where people have formed themselves into a municipality, and taxed themselves for municipal purposes, why should they be placed in a worse position than people in the country where the rivers have been attended to and they have got the benefit of it?

464. In other words, you ask for this work to be done on national grounds, with the view of preserving the health of the people living in the neighbourhood and surrounding districts? I do. Of course there are a number of works around the city, with which I suppose you are more conversant than I am, to which the principle of betterment tax has not been applied, and I ask that what is fair should be done in connection with our river.

465. *Mr. O'Connor.*] During the time you have lived at Marrickville, with the advantages of being the Mayor, you could have known very little more than you would know as an ordinary resident? I have known the river twenty-five years.

466. *Chairman.*] You regard Cook's River as a State waterway under the control of the State? Yes.

467. Before the municipal council was in existence that water-way was obstructed by the dam at Cook's River, and since the erection of that dam certain vested interests have grown up; therefore, it becomes only fair to those vested interests to allow Cook's River to flow unimpeded to where it originally went? Yes.

468. You find on the borders of your municipality, consequent upon the construction of that dam, a nuisance with which you are powerless to deal, it being outside your municipality? Yes.

469. This nuisance is created partly by the presence of the dam and partly by the fact that stormwater and sewage from outside your municipality find a resting-place there? Yes.

470. Therefore, you contend that although adjacent to the Borough of Marrickville, it is not the business of the Borough of Marrickville to deal with that sewage and stormwater? Quite so.

471. With regard to the drainage of Marrickville Flats, you believe that a reasonable rate might perhaps be levied on those primarily benefited so long as it is limited to that expense which might be legitimately incurred in bringing about that benefit? Yes.

472. Any rate that might be levied for the draining of Marrickville Flats, and the property in the flats should be absolutely limited to the cost of the works in doing that draining;—in other words, you contend that, as regards dealing with stormwater and sewage, and the pollution of Cook's River, charges for work of that kind have no right to be put on any vicinity that might be benefited by the draining of Marrickville Flats? Yes. I should like to qualify that by saying, so far as the trouble was effectually removed.

473. And you contend that no benefit should be paid for unless it were perfectly clear that a benefit had been conferred? Quite so.

474. If it be not a State matter to deal with the stormwaters, you say it is not the business of the municipality into which those stormwaters find their way to dispose of them; in other words, if it be not a State matter it is clearly not a matter for the municipality in which those stormwaters discharge, but for all the municipalities where they collect to deal with? Yes; that is my contention.

475. The present state of Cook's River and the valley leading to it is a continual menace to the health of the community? Yes.

476. It is also an annoyance to the municipal authorities, and to the residents in the submerged area? Yes.

477. And unsightly to a considerable portion of the municipality? Yes.

478. As Mayor at Marrickville, your opinion is that Marrickville is a very healthy place? Yes. It is a fact that our municipality, taking it throughout, is a healthy municipality, and we are anxious to keep it so, but will not be able to do so unless these works at Cook's River are carried out.

479. You do not approve of the alternative scheme;—you express no engineering opinion with regard to any schemes;—you limit your expression of opinion to the evil and the need for the removal of that evil? Yes.

480. You state that one objection to the alternative scheme is that there is a probability that it would cause water to collect at the intake in a portion of the flats not generally liable to submergence? Yes, at certain tides.

481. Inasmuch as the height of the land is so little above low water, there is a probability that at certain tides, in that it will not be able to get away into Cook's River, it may flood land at the north-eastern portion of the valley which otherwise might escape? Yes.

482. *Mr. Fegan.*] Do you not think that legislation is necessary to prevent people from building on those swamps and flats in the future? I certainly do think it is necessary.

483. Seeing that Government money has to be spent in getting them out of those swamps, prevention is better than cure? I think something should be done to prevent such a state of things existing, and nothing can be done except by Act of Parliament.

William Robson Benson, Esq., Alderman of the Borough of Marrickville, sworn, and examined:—

484. *Chairman.*] Have you heard the evidence given by the Mayor? I have.

485. In general principles, do you agree with him? I do.

486. Is there any serious difference between your views and his? I have represented several public meetings in Marrickville, and as honorary secretary of those meetings, I am expressing their opinion when I say that all they are asking for is the dredging of Cook's River to remove the existing evil. The conferences represented about eleven municipalities—Hurstville, Rockdale, Kogarah, St. Peters, Brskineville, Newtown, Camperdown, Marrickville, Canterbury, Enfield, and Ashfield. The result of those conferences was that they agreed that the river in its existing condition is a menace to public health, and the river being a national water-course, and the evil being in a great measure caused by the Government erecting the  
Cook's

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Benson, Esq.  
30 June, 1896.

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Cook's River Dam, therefore it is the duty of the Government to remove the evil and prevent the spread of disease which would be likely to result from the present condition of the river. I may also mention that about eighteen months ago a deputation, the result of one of these conferences, had the honor of waiting on the Minister for Public Works who then almost promised that if the dredging of the river did not mean a serious sum of money to be expended he would undertake the work for the people. However, an answer was received by me on behalf of the conference to the effect that it would be too costly—that it would run into a sum of about £36,000, and necessitate the building of an expensive dredge on the river at an unreasonable cost, and other incidental expenses. The conference took exception to the cost of building the dredge, and I presume you will have evidence brought forward proving that the building of a dredge for the purpose of removing the mud and silt from the river would not necessitate a great expenditure. Afterwards a second conference was held, representing from 88,000 to 91,000 people\*—that is the whole of the residents of those municipalities which I have enumerated—and the result was that it was determined to petition the Minister for Public Works to remove this evil. But before the petition had been in circulation for any length of time the matter was remitted to this Committee, by Parliament, on the motion of the Minister for Public Works, and therefore those petitions have not been completed. But I recognise the fact that we should have very little difficulty in procuring the signatures of 30,000 or 40,000 people praying the Government to abate the evil from which we are now suffering, that is the insanitary condition of the river. The river, as you are perhaps aware, has been dammed up for nearly sixty years; it has no outlet at all. As population has surrounded the river, naturally decomposed organic matter has drifted into it, and the sills of the flood-gates being 2 feet above low-water level, the whole of the decomposed matter is in the river itself, and in the summer the fact is recognisable very easily. I had the Secretary of the Fisheries Commission (Mr. Smithers) on the river with me one day, and the smell was so foul that it caused him to vomit. I have also seen fish absolutely poisoned there through the insanitary condition of the river, and floating on the surface of the water. During the ordinary level of the river in summer-time if you were to stir some parts of it with a stick, you would be very glad to run away from the banks of the river. I recollect the river 25 years ago, and I used to bathe in several portions of it—one in particular at the Arncliffe Bridge, where there were 8, 9, or 10 feet of water. At the bottom of the river then there was crystal sand, and the water was almost absolutely pure in appearance; but now I do not think that anyone could venture to bathe in the river and visit another person afterwards without fumigation. The petitions referred to have been suppressed for the reason that the matter is now under reference to this Committee, and therefore no further action has been taken pending the result of this inquiry. Mr. Darley's original scheme is, I think, to remove about 300 feet of the existing dam, so as to give free access to the waters of Botany Bay. The expression of the wish of the conferences was, that the river should be made free and navigable; and being a national waterway, and purely under the control of the Government, and not under that of any municipality, it was the duty of the Government, having created the evil in a great measure by the construction of the dam, to remove the evil complained of.

487. *Mr. O'Connor.*] Which ward do you represent in the Borough Municipality? The south ward, immediately bordering on the river.

George Alfred Morehouse, Esq., Alderman of the Borough of Marrickville, sworn, and examined:—

G. A.  
Morehouse,  
Esq.  
30 June, 1896.

488. *Chairman.*] You have heard the statement of the Mayor and also the statement of Alderman Benson, setting forth in detail the insanitary condition of the river? Yes.

489. Are you prepared to corroborate those statements? Not entirely.

490. Will you please state any point of difference? The main point of difference I take is as regards the Mayor's statement, inasmuch as the Borough of Marrickville have not asked the Government to deal with the flats. I am of opinion that we can deal with the flood-waters that fall on our own area ourselves, if the river is properly dealt with by the Government.

491. But, unfortunately, a considerable quantity of water which drains down the valley of the creek comes into Marrickville? In a very short time, when the sewerage works are completed, very little of that will come.

492. Do you mean us to understand that the question of the drainage of Marrickville Valley itself is a matter which can stand over until the main scheme is decided? I believe the local authorities could deal with the flats themselves if other water were kept off the flats by the Government, and the river dredged.

493. What water makes its way down the valley of Marrickville Creek which does not fall within the boundaries of Marrickville? A small amount from Petersham, Newtown, and St. Peters.

494. The stormwaters from those three municipalities come down the valley? Not the whole of those municipalities, but a portion of them.

495. How then is it possible to deal with the drainage of the valley without taking into consideration the stormwaters. I think it is, if we have an outfall at Cook's River to drain to.

496. If a dam be erected across the mouth of Cook's River, and Cook's River be up 3 feet, the Marrickville Valley will be flooded from the municipalities enumerated? I do not think so. I do not think there will be sufficient water to flood it.

497. You are not prepared to tell us the exact catchment area, or the amount of the waterfall? No; but our engineer, I think, could.

498. You might just as well be flooded by Cook's River as by the waters which come down from the other municipalities? Yes, if sufficient came to flood us.

499. You recognise that danger? I certainly do.

500. Therefore the draining of this valley for the stormwater coming down the valley is a matter for more municipalities than Marrickville? Yes; but of course my contention is that when all the places are connected with the sewerage system there should not be any great quantity coming down there.

501. But the sewerage will not deal with the stormwater? No, but it will deal with all the filth of the sewage matter.

502. *Mr. Farnell.*] You really approve of the original Departmental scheme? I do, certainly.

Charles

\* NOTE (on revision):—88,000 to 91,000 people as under (say) Hurstville, 6,000; Rockdale, 6,200; Kogarah, 2,500; St. Peters, 6,000; Erskineville, 6,000; Newtown, 22,600; Camperdown, 7,000; Marrickville, 17,000; Canterbury, 3,000; Enfield, 2,500; Ashfield, 13,000; total, 91,800.

Charles Moyes, Esq., Marrickville, sworn, and examined:—

C. Moyes, Esq.  
30 June, 1896.

503. *Chairman.*] You are an old resident of Marrickville? Yes.
504. How long have you been there? About thirty-five years.
505. Have you heard the evidence given by the Mayor, Mr. Benson, and Mr. Morehouse? Yes.
506. Do you agree, generally speaking, with the evidence we have heard? Yes, generally speaking.
507. Do you differ from them in any way on any essential point? There may be some minor point on which I would differ from them.
508. But, generally speaking, you would allow their statements to go for yours? Yes.
509. There is nothing you desire to particularise in which you differ seriously from them? There is nothing on which I differ seriously from them. I look at everything from a practical standpoint, not from an engineering standpoint. I have known Cook's River for forty-one years.
510. Do you know how high the tide used to go up before the dam was erected? It used to make up Cook's River to very near Canterbury. There was a breakwater at the old sugar-works to keep the tide back in order to get fresh water for the engines.
511. And how far up Wolli Creek? About a mile.
512. What was Wolli Creek like when you first knew it? There was a creek, but it was silted up greatly.
513. Is there much difference in Wolli Creek in the last thirty years? Yes, a great difference.
514. What is the difference? It is now, you may say, merely a flat. There is scarcely any watercourse there, whereas at that time there was a clear stream running through it the same as Cook's River.
515. Wolli Creek has gradually silted up until now it is not much more than a reed-bed? Yes, that is so.
516. Has there been much difference in Cook's River in the last thirty years? Yes; a great difference. At that time it was a beautifully clear stream of water, and now it is nothing but a mud-hole. If a dog goes into it to swim he comes out covered with mud. If you are rowing in a boat every paddle you strike in the water you stir up the black mud which is on the bottom. It is something like the Yarra at Melbourne. When steamers go up the Yarra you can see the black mud that is stirred up behind them. I may say that I have seen people fishing with nets above the dam.
517. Can you tell us in what consists your difference of opinion as regards the evidence given by the Mayor? In the main what they have stated is right, but as to the expense, I do not believe the work would cost half the money.
518. Your difference of opinion is limited to the question of cost, and not being an engineer you are not prepared to definitely state that? No, I am not.
519. But it appears to you to be more than it ought to be? Yes. In reference to Mr. Darley's scheme, I see that there is to be a road bridge across the dam 300 feet, and looking at the matter from my practical point of view, I think it would be a waste of money to build a 300-foot bridge there. You could take the waters of the Nepean through it and it would not do as much good to the river as a narrower bridge. It would not clean the river out so well as a bridge of 100 or 120 feet.
520. How often have you seen the flood over the top of the dam? I have not seen it since the last opening was put in on the south side, but I have seen it when it was 3 feet over the dam from one side to the other. That was about forty years ago, and the Government has from time to time raised the road. The usual level of the road was where you see the flags laid along the side of the road, and I have seen the tide washing over that, but the Government has added to it and added to it and made the thing worse behind it. Another obstruction to the river was made when the railway was constructed. What was done in connection with the sinking of the cylinders made the river narrower there.
521. Supposing the dam were removed and a bridge were erected to allow the flood-waters to get clear away, how high then, at the present bridge site, would the highest flood you have ever seen in the river rise? I do not think it would rise more than 3 feet higher.
522. Then only for the dam, in your opinion, Cook's River would never get out of its banks? That is my opinion.
523. Any floods in Cook's River would be inconsiderable only they are obstructed by the dam? That is my view.
524. *Mr. Clarke.*] You think that a bridge of 300 feet would be expensive, and not be so useful as a narrower bridge? Yes.
525. By that, I presume, you mean that a narrower space would give more of a current to take the waters away? Yes; it would clean the river more.
526. But if the dam were taken away, and a bridge were erected, would not the low-lying lands be flooded? They would have to prevent that by banks. I am sure the Marrickville Council would be only too willing to protect themselves if there were an outlet for the river.
527. You mean to prevent floods going on the low lands, either fascine or other embankments would have to be formed? I believe that. I do not think it would require more than 3 or 4 feet at the outside.
528. It would be inexpensive? Yes; I cannot see why a large sum of money should be expended. All that is asked for is the opening of the river to take away the flood-waters, and I think the Marrickville Council would protect themselves, and I am sure the people interested in the low lands would be glad to assist in opening up drains, and throwing up an embankment, so as to protect that land from being flooded.

Edward Campbell, Esq., M.A., Solicitor, Richmond, sworn, and examined:—

529. *Chairman.*] Where do you reside? At Richmond; but my people have lived at the junction of Cook's River and Wolli Creek forty years, and I was born shortly after they settled there.
530. Do you desire to make a statement? Yes. The Cook's River Dam was originally erected to prevent floods in Cook's River. The area of arable land in the Colony was limited to the county of Cumberland principally. In order to keep arable lands from being flooded the dam was erected, previous to 1840. My father, seeing that the dam did not answer the purpose for which it was erected, for over 20 years besought the Government to put in a second opening on the southern end of the dam. That was done in 1876. After that the floods were very much lessened above the Cook's River Dam. In 1884 the Government engineers, contrary to the advice of local residents, put embankments on the southern channel of Cook's River above the dam, right at the mouth of Wolli Creek. The waters of Wolli Creek drained from Hurstville through Rockdale and Arncliffe, and when they debouched into Cook's River their former outlet was blocked by this railway embankment and they were thrown back up Marrickville. Previous to that embankment being erected in 1883, it took a week's rain to cause such a flood as would now be caused in the same area.

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area by twenty-four hours rain. The Government engineers, contrary to the advice of local residents built the railway bridge on what was a mud island. The silt from the cylinders was thrown on to the island, and all the back-waters from Rookwood on the one side and Hurstville and Penshurst Park on the other, together with the drainage of the basin south of St. Stephen's Church, Newtown, were kept back; they had to rise to get over the island where the bridge was, and the water was thrown back. The natural current of Cook's River follows the southern bank. The only useful opening in the Cook's River Dam to let out the flood-water I find is now recommended to be closed, and the very natural outlet of the trend of the stream is recommended to be closed under this scheme. The scheme proposed, I consider, and say advisedly, is preposterously expensive. There is no necessity for improving private lands at the expense of the State, and I speak as an interested person, for that would be to my personal pocket interest. If nature may be followed in an engineering undertaking,—that is if, not as proposed now, but as proposed twenty-five or thirty years ago, the proper outlet for Marrickville be allowed into the river, the natural flow of the water from Marrickville would go fairly well in a direct line from the present site of the railway bridge to the embankment. I have said that the Wollie Creek is blocked by the railway embankment; but Wollie Creek now has to carry off that part of the Arncliffe valley drainage which formerly had its outlet on the West Botany side of the Cook's River Dam. If instead of falling in at the north-eastern corner beyond the dam, and instead of closing present openings, or in any way interfering with the dam as it at present exists, more openings towards the southern side were put in and properly worked, that would prevent a flooding of the area which is now subject to floods. But the flood-gates have never been properly attended to. If a man happens to be there they are attended to; but when flood-water comes down, and meets the high tide, very often the Marrickville Flats and the Cook's River flats receive the benefit both of the flood-water and the high tide simply through want of attention to the flood-gates now. To prevent the flooding of Marrickville, steps should be taken to prevent the Wollie Creek from backing up. The tendency of Wollie Creek is to make north instead of turning down Cook's River, on account of the obstruction at the railway embankment. That I have proved by noticing after a flood that on the Unwin's Bridge Road the sand is washed to the north rather than to the south. The proposed concrete dam at Undercliffe Bridge is not at all recommendable—that is the most charitable word I can use.

531. You think it would force the nuisance up the river? Exactly. There is no necessity for any large expense to be gone to. When I read in the papers that a sum of something like £36,500 was proposed to be spent on improving Cook's River, I thought it very large, because if the dam be widened and the high tide water kept out and prevented from joining with the flood-waters, the question of flood is largely and perhaps absolutely done away with, but not if the southern flood-gates are closed. The area between the railway and the present dam is silted up on account of their being no scour. The waters from the river and the waters from the creek are both blocked at the railway bridge, instead of being allowed to flow where they used to flow previously. In 1882, I know there were 10 or 12 or perhaps 15 feet of water where the southern railway embankment is, right close to the shore. There is no scour there, and the consequence, as Mr. McCoy said, is there is no channel between the railway and the dam. It is simply a mud flat.

532. What would be the difference in the rising of the tide between the mouth of Shea's Creek and the lower side of the dam? I do not know. All the grants lying up Cook's River and Wollie Creek were made by the Crown to the individuals who first owned them, after the erection of the dam.

533. You are sure of that? I am certain of that. I know that in our own case—Unwin's grant—there were vested interests created by the dam, and the dam was made to prevent the flooding of the area with salt water, and the removal of the dam would flood land granted by the Crown since the dam was made, unless this expensive fascine bankwork were carried out.

534. Supposing the Cook's River Dam were not in existence, would there ever be serious floods in Cook's River? There would be a larger flood in Cook's River than I think has ever been known within memory.

535. If there were no dam there the flood would be higher? Very much higher.

536. How do you come to that conclusion? Because the present flood-waters when separated from high tide waters rise 4 or 5 feet over the lowest part of the flats, and if they were allowed to mix with the tide waters and another 5 feet were added, it would just double the height of the flood. In my opinion if the waters of Wollie Creek were let out to the sea quickly, and means were taken to prevent them from running up Marrickville Flats, and if the flood-waters of Cook's River were taken out quickly without being allowed to run over Marrickville Flats, or to block back the waters from there, the same could be done at a very much less expense than that proposed. I know that in the Western Suburbs Out-fall Sewerage Scheme what is called the low-level system would take away a lot of the sewage which now runs into Cook's River. What has caused the floods to rise so quickly in Cook's River is, that the water from the high levels, owing to curbing and guttering in different municipalities, gets away more quickly into the river than it formerly did, and rushes down more quickly. The flood comes more quickly now than it did before, but the flood does not get away as quickly now as it did before, and the two things combined cause the trouble complained of by the Marrickville people.

537. *Mr. Fegan.*] Have you given any consideration to the alternative scheme? Yes. As an engineering scheme to display engineering knowledge, and hang the expense, you could not beat it. It is elaborate.

538. *Mr. Roberts.*] Would you consider an expense of £25,000 an extravagant one with the view of remedying the evils complained of? Well, for the benefit of health it is hard to say what the value would be, but I know it might be done more cheaply—that is, if the scheme were carried out in a practical way, and not on a theoretically grand scale. If the course pointed out by nature were followed rather than that suggested by man, I think £25,000 would be ample to do the whole work.

WEDNESDAY, 1 JULY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. CHARLES JAMES ROBERTS, C.M.G. |  
The Hon. DANIEL O'CONNOR.HENRY CLARKE, Esq.  
JOHN LIONEL FEGAN, Esq.

FRANK FARNELL, Esq.

The Committee further considered the proposed Improvement of Cook's River.

James Phillip Webster, Esq., A.M.I.C.E., Engineer and Overseer to the Borough of Marrickville,  
sworn, and examined:—539. *Chairman.*] What are you? I am a civil engineer.

540. What is your present employment? My appointment at the present time is that of engineer and overseer to the Borough of Marrickville.

541. Have you been there long? I have been in the position nearly five years.

542. You have therefore an intimate knowledge of Cook's River, and of the vicinity of the river—Marrickville Valley, and so forth? I have.

543. Are you aware of the Departmental proposals—the scheme first submitted to the Committee, and also the alternative scheme? I had the privilege of seeing both schemes with the Marrickville Council last week.

544. You have had an opportunity of forming an opinion with regard to them on general principles? I have.

545. You know Cook's River? I do.

546. You are aware of the insanitary state of Cook's River above the dam? I am.

547. How is that caused? That is caused by various reasons.

548. Will you state them? The first reason is the amount of *debris* brought down by Wollie Creek principally in the shape of sand; the second is the amount of light matter held in suspension by the floodwaters coming from the Marrickville Valley; those are the two principal reasons.

549. With regard to Cook's River itself, is that a polluting agent? Cook's River is a polluting agent, by reason of the amount of country that it drains, the Canterbury district in particular.

550. Therefore we have three agencies at work, first, Wollie Creek, second, Marrickville Valley, third, Cook's River? Quite so.

551. Will you describe the catchment area of Wollie Creek, and the reasons why it is a polluting agent? The catchment area at Wollie Creek extends from the dam towards Hurstville, and the watershed then lies to the west of Hurstville, and runs northerly to Cook's River again. It is a basin lying on the southern bank of the river.

552. A large basin? The extent of that basin is 8 square miles, or 5,120 acres.

553. Is that basin much occupied by settlement? It is much occupied by settlement from the fact that the Illawarra settlements are within the basin.

554. When you speak of the Illawarra settlements, what do you mean? Part of Kogarah and of Hurstville, and a district lying between and to the west of those portions with which I am not very well acquainted. There is a considerable amount of settlement; in fact, a large population resides within that drainage area.

555. In addition to the ordinary pollution that may naturally be expected from settlement, are you aware of any special pollution that takes place on Wollie Creek? I am not personally aware of any special pollution, but from what I have gathered from the reports in the papers from time to time, I believe that causes of pollution do exist in the shape of manufactories.

556. Up Wollie Creek? Yes.

557. Tanneries? Something of that kind.

558. But you are not prepared to express a definite opinion on that point? No, I am not.

559. But that Wollie Creek is a polluting agent you have no doubt? I have no doubt of that.

560. Will Wollie Creek, for all time, be the discharge for flood-water over the 8 square miles you particularise? It will.

561. Now, turning to the question of Cook's River, will you describe the catchment area of Cook's River, and, as far as you can, the cause of the pollution of its waters? That is the main catchment area under consideration. The total catchment area at Cook's River above the dam is 30½ square miles. The area of that portion of the river under consideration now—above the dam, and above Wollie Creek basin also—is 22½ square miles. That would be 14,400 acres.

562. What is the settlement upon that? The settlement within that basin is also considerable. The township of Canterbury is situated therein, and a portion of Enfield, whilst a portion of Ashfield, and the western portion of Marrickville also drain into it.

563. Will Cook's River be for all time the discharge for flood-waters for that district? It is the natural outlet for the whole of that district.

564. And is likely to be the flood-water discharge for it for all time? Yes.

565. What causes the pollution of Cook's River;—do you know of any special cause of pollution in connection with it? It is caused by general settlement.

566. Are there any manufactories upon Cook's River? Not a great many; the pollution is from residential settlement.

567. You prefer to limit your statement in regard to the pollution of the water of Cook's River to the general term of "general settlement"? Quite so.

568. What flood-water comes down Marrickville Valley? The total watershed of Marrickville Valley is, in round numbers, 1,700 acres.

569. From where does the flood-water come? From St. Peters, Newtown, Petersham, and Marrickville.

570. Are all these municipalities interested in having a suitable discharge down Marrickville Valley? More or less.

571. For all time will the area you last particularised find its outlet for storm-water down Marrickville Valley? Yes; for all time.

572. Or by some scheme that takes the place of Marrickville? Quite so.

J.P. Webster,  
Esq.,  
A.M.I.C.E.

1 July, 1896.

- J. P. Webster, Esq., A.M.I.C.E.  
1 July, 1896.
573. With regard to the pollution of those waters, do you again describe it as a matter of "general settlement" on the catchment area? Yes, I do; more so than any of the other basins. The settlement is denser on the Marrickville basin.
574. And therefore the pollution is greater? Quite so.
575. Are you aware of the system of sewerage that is being carried out in connection with the city and suburbs? I am.
576. Are you aware that the sewage of the area last described by you will, in the course of a few years, be intercepted by the system of sewerage which is now being carried out? I am aware that the Marrickville basin sewage will be intercepted within a few years, but not that of the other areas—that is the Wollie Creek basin and the upper waters of Cook's River. The total drainage area of Cook's River is 19,520 acres—that of Wollie Creek is 5,120 acres, and that of Cook's River proper is 14,400 acres.
577. The sewage that at present finds its way into Cook's River and also into Wollie Creek will not be intercepted by any sewerage system at present being carried out for some considerable time? That portion of Cook's River above Marrickville will not be—at least not to my knowledge.
578. And therefore Wollie Creek and Cook's River will be, for all time, the storm-water discharge for the drainage centres of the areas described, and also carry the sewage for some considerable time? Quite so.
579. Marrickville Valley will be the storm-water discharge for all time, or some alternative scheme that takes the place of Marrickville Valley will be; but in the course of a short time the sewage will be intercepted? I am not in a position to say in a short time. Judging from the progress that the western suburbs sewerage system has made during the last few years I should say it would be a very long time before the whole of that were intercepted.
580. But it appears to be terminable? Yes.
581. You have seen the Departmental scheme that was first submitted to the Committee? Yes; I have seen the original scheme.
582. And the alternative scheme? Yes.
583. You understand them? Yes.
584. Have you any levels from the junction of Shea's Creek to the present dam across Cook's River? I have no levels along that portion of the river.
585. Have you ever taken the rise and fall of the tide at the dam on Cook's River? Yes; I have given attention to that matter.
586. What does it rise between spring-tide and neap-tide? Between neap-tide and spring-tide—high-water mark—there is a difference of 2 feet at the dam.
587. On the lower side of the dam? Yes.
588. From dead low water to spring tide—highest water—is how many feet? Six feet.
589. Do you know what is the rise and fall of the tide in Botany Bay? I have not had opportunities to take observations in Botany Bay.
590. Is it reasonable to suppose it will be much more than that? I am opinion that would be about the same.
591. There is no material difference? No.
592. Is Shea's Creek about one-third of the way to Botany Bay? I should say it is, approximately.
593. Are you of opinion that there would be any great difference in the rise and fall of the tide at the mouth of Shea's Creek compared with Botany Bay? No appreciable difference.
594. Therefore no appreciable difference between that and the dam? None whatever.
595. Therefore, there would be, in your opinion, as great a difference on the lower side of the dam in the rise and fall of the tide as there would be at the mouth of Shea's Creek? Yes; that is so.
596. Have you any levels for the dam up the entrance of Marrickville Valley? I have levels. The water is, with the exception of heavy gales, level.
597. Can we regard it as being approximately level? It can be regarded as being approximately level.
598. Therefore, do you believe that it is practically level from the entrance of Marrickville Valley to the mouth of Shea's Creek? Not so, because at the present time there is a drop of 2 ft. 6 in. from the western to the eastern side of the dam—that is, the waters at Cook's River, west of the main dam are close on 3 ft higher than low tide to the east of the dam.
599. You attribute that to the effect of the dam and not to the contour of the country? It is decidedly the dam that backs the water up to that extent.
600. Supposing the Cook's River Dam were so constructed that there was no impediment to the water in getting away, would the water then lie approximately level—say within a few inches—from the mouth of Shea's Creek to the mouth of Marrickville Creek? In my opinion it would be for all practical purposes level.
601. Do you believe the discharge of the alternative scheme would have a 2 ft. or 3 ft. better fall than a discharge into Cook's River at the end of Marrickville Valley? That is if the dam is cleared away and Cook's River is so that the waters can get away without impediment of any kind.
602. If arrangements are made so that Cook's River Dam does not materially affect the free running of the water, would there be 3 feet difference of head between the mouth of Shea's Creek and Marrickville Valley? I decidedly say no to that question.
603. There would not? Not in my opinion.
604. Therefore if a Departmental scheme is placed before us, one of the main reasons for which is a better discharge at the mouth of Shea's Creek than at the mouth of Marrickville Creek, you believe it is based on a wrong contention? I do.
605. You candidly believe so? I do, candidly.
606. If there be not 2 feet or 3 feet better head at the mouth of Shea's Creek than at the mouth of Marrickville Creek, can you urge any other reason for the alternative scheme being proposed? I can urge no reason whatever for the alternative scheme.
607. If the mouth of Shea's Creek and the mouth of Marrickville Creek be practically the same level, which, in your opinion, will be the best place at which to discharge the flood-waters from Marrickville Valley? Into Cook's River, at the bottom of the valley.
608. Using the old valley bed as it were, for the drainage centre? Quite so.
609. You have already stated the area drained by Marrickville Valley;—can you give us any idea what amount of water would fall on that area, with a given number of inches, and how long it would take to go through a tunnel 15 feet by 6? I calculate that taking a rainfall of 8 inches in twenty-four hours—that

is an excessive rainfall, but it has happened in Marrickville, and 25 per cent of that water being absorbed by the ground, leaving 75 per cent. or 6 inches to run off in the twenty-four hours, that tunnel would take fifty hours to discharge that quantity of water. Those figures are given on the assumption that the tunnel in the alternative scheme has a maximum grade at low water of 1 in 3,200.

J. P. Webster,  
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610. Do you mean that, supposing the tunnel were working all the while, and carrying continuously, it would take fifty hours to carry it off then? Yes.

611. And if we halve the rainfall and make it 4 inches, which would be not an unreasonable quantity, the tunnel would take twenty-five hours to carry it off? Quite so.

612. With an uninterrupted flow, if 75 per cent reached the drainage centre and sought the intake of the alternative scheme, it would take twenty-four hours to drain away if it ran free all the time? Quite so.

613. If the tunnel were worked only one-third of its time—worked intermittently because of the tide—it would take three days? It would take three times the twenty-four hours.

614. What would be the condition of the valley then? The result would be that the valley would be under water.

615. Flooded from end to end? Yes.

616. Are you aware how much the outlet of the open channel is, in relation to high water? I take it from the section, that the outlet of the tunnel is at dead low-water mark.

617. Does the section show that? There are no levels on this section.

618. We will discuss the alternative scheme,—presuming the discharge to be at dead low-water, how much would that then be below the intake—in other words—how much is the mouth of Shea's Creek, in your opinion, below the intake of the open channel to the west? Well, the grade of the tunnel at 1 in 3,200, is little better than 18 inches to the mile.

619. We turn now to the original scheme: have you any information as to what the cost will be of constructing a suitable storm-water channel from the mouth of the intake of the alternative scheme to Cook's River—what width would the storm-water channel require to be? In 1892 I prepared a report for the Marrickville Borough Council, in which I gave an estimate for improvements of Cook's River similar to those proposed by Mr. Darley. My proposal was to lower the sills of the flood openings on the main dams, to construct a V-shaped training-wall, or two training-walls, at the entrance to the railway bridge, to deepen the channel from the main dam to the lower portion of Marrickville Flats, and other smaller items, which I estimated would cost altogether £6,887.

620. And your storm-water discharge at the Valley? I did not touch the Valley. I looked upon that as a secondary consideration.

621. How wide would it require to be to carry the flood-water? Under that scheme I recommended 300 feet.

622. You are talking of Cook's River? Yes.

623. How wide would the storm-water channel require to be to carry the flood-water that comes down Marrickville Valley? My estimate of that is—north of Sydenham Road, 20 feet wide. At the Sydenham Road crossing, the north-western drain joins the main drain, and 40 feet wide is my estimate from that point south to the railway bridge. The railway bridge crosses the Marrickville Valley opposite the park. From the railway bridge to Cook's River, my estimate is 60 feet wide.

624. Taking that part from the railway bridge to Cook's River, what length would that be? About 50 chains. Of course, these measurements are only approximate.

625. You therefore consider it is necessary to have a 60 ft. storm-water channel to do the same work that the alternative scheme proposes to do in 15 ft.? Yes.

626. You have four times the width? Yes.

627. From an estimate of the catchment area, do you believe that width is required? I believe that width is fully required to take off the storm-water.

628. We will divide the cost of that into two—the cost of land resumption or severance, and the cost of construction. Is it possible that any extensive land resumption would have to take place to get the storm-water channel down Marrickville Valley? In my opinion it is not.

629. You would require to pay for some land? Yes.

630. Can you give us any estimate of what it would cost? That is a question I have not gone into.

631. Would the cost be serious? No, it would not be serious; because the land at the lowest portion of the valley is of very little value.

632. Is it not a fact that any lands lying so low that they would be contiguous to this storm-water drain or channel, would be very much benefited, and, therefore, the owners, for purposes of that kind, ought to be prepared to sell the land at a very low rate? It would appear reasonable that they should dispose of their ground for such a purpose at a low rate.

633. It is clear that it must do them a great deal of good? Quite so.

634. Except in flood-time, it would keep Marrickville Valley perfectly dry? It would minimise the danger of flooding considerably.

635. Can you give us any opinion as to the cost of such a drain? I have not gone into that question, because I am not an advocate of draining the whole of Marrickville through a central drain. Since I have been in the employment of the Marrickville Council, I have never advocated a system of that kind.

636. What do you propose to do with the storm-water that comes down? My proposition would be to intercept the high-level water on a certain contour-line, so that it would gravitate into the river at all tides. Then that would separate the high-level water from the low-level water.

637. But your resumptions under a scheme of that kind would be very heavy? In carrying out the proposal that I should make in that case the resumptions would be very light indeed, because Marrickville is so situated that advantage could be taken of two ridges for channelling purposes, and you could intercept at two points in the Borough of Marrickville, so as to intercept the upland water at such a level that it would gravitate into the river at all tides, and by doing that, you would get rid of the high-level water for all time. It has been a great source of complaint.

638. Which would be the cheaper thing to do? I do not look so much to the cost as to the effectiveness of the two schemes.

639. What was your estimate for intercepting the water of the higher levels? I have never been asked to give an estimate; and I have not gone into that question. I went only into the question as to which was the best system to adopt in dealing with the storm-waters of Marrickville.

- J. P. Webster, Esq., A.M.L.C.E.  
1 July, 1896.
640. With regard to the question before the Committee, is it your opinion that it can be divided into two—one the question of remedying the pollution of a tidal river—Cook's River—and the other the proper dealing with the discharge of flood-waters from the areas which naturally discharge into Marrickville Valley? That is my decided opinion.
641. And if Cook's River be dealt by the State, it then should be reasonable for the municipalities interested to find a suitable discharge into that? Quite reasonable and just.
642. The opening shown between the fascine banks of Cook's River and the position of the iron bridge is apparently 300 ft.? Yes.
643. Would it be possible to have sluice-gates that discharge at the Cook's River Dam in such a way that immediately the water below the dam fell the water of the river should commence to fall equally above the dam; in other words would it be possible to preserve a continuous level through the dam? In my opinion it is not possible to preserve a continuous level.
644. Not through the sluice-gates? No; because there is the friction of the sluices to overcome, and the power required to work those sluices, and that must necessarily take a certain head of water. At the present time the sluices in the Cook's River Dam take a head of 15 inches of water to work them.
645. What would be the least amount of rise it would be reasonable to expect, must of necessity be overcome in any system of sluicing? In my opinion, about 4 inches.
646. Therefore, the erection of suitable sluice-gates in a properly constructed work across the present position of the dam would not necessitate the rise above the dam being more than 4 inches higher than the water below it? I may say from 4 to 6 inches.
647. Therefore, with sluice-gates large enough to deal properly with the discharge of Wolli Creek into Cook's River, you would not lose more than 4 inches head? That is so.
648. Then it follows if you brought the cutting round the toe of the ridge, and under the railway station, discharging into the square basin running along by the dam, you would have a 4-inch better discharge than if you discharged out of the mouth of Marrickville Valley? Any discharge into Cook's River, below the dam, would be 4 inches better than the discharge above the dam, provided in the first case no gates were used.
649. Supposing it were regarded as a wise thing to gain that 4 inches, do you see any objection to discharging into the sort of dock that is cut running past the dam? I am of opinion it is not possible to discharge with less than that, because unless you have some mechanical means of staying the rising tide, the whole of the flats will be inundated.
650. But I take it for granted you would discharge intermittently—I mean, you would have a gate or door of some kind? Then you would lose so many inches by the working of that gate or door.
651. You think that by discharging into the corner of the dock, you would lose as much as you would in going through the sluice-gates in the dam? I think so. If you discharge at dead low-water mark, with the action of the sluice-gates you lose 4 inches, that is, your discharge into the river to the west of the main dam, would be 4 inches higher than that. You have practically a fall of 4 inches by the action of the gates on the sills in the dam.
652. By bringing a canal round the point of the ridge, and discharging into a corner of the dock you do not think it is possible to save those 4 inches? I do not think so.
653. Is 4 inches very material? Yes; 4 inches is material, but at the present time, with the dam holding up 2 feet 6 inches, in comparison to that, it is immaterial.
654. You approve of the dam across the mouth of the Marrickville Valley? Yes, I do.
655. With the exception that there should be an opening there to let the water out in that direction? Quite so.
656. Wolli Creek, as we have it shown on the plan before us, would have a tendency to hug the bank and make up towards Marrickville Valley as it is at present;—have you a proposal to obviate that? My proposal to obviate that is to construct a proper training-bank, so that the waters of Wolli Creek should be drained in a line parallel to that of Cook's River, so that the two currents should go through the railway bridge side by side. The action of Wolli Creek at the present time, is, to run right athwart the waters of Cook's River, and in consequence of that action they choke one another. To get over that difficulty the proposition was to construct a training-bank opposite the railway bridge in the shape of the letter V.
657. That is to throw the Cook's River water through the bridge? To catch the Cook's River water, and throw it through the bridge in a line parallel to the Wolli Creek water.
658. And the dyke would throw the Wolli Creek water through the bridge? Yes; it would throw the Wolli Creek water through the bridge, whilst the other would throw the Cook's River water through in a parallel line, and thus the two currents would assist each other.
659. Have you any knowledge of what effect the railway bridge has had on that portion of Cook's River? I have not been in Marrickville sufficiently long to be able to express an opinion on that question; but I have taken levels, and I have also taken cross-sections of the river; and from my figures I have proved that there is ample room under the railway bridge; in fact there is a greater area through the railway bridge than is requisite to take the combined waters of Wolli Creek and Cook's River.
660. Have you ever seen a flood in Cook's River below the dam, submerging the surrounding country? No; I have never seen that.
661. Is it possible that any flood could rise over the fascine banks at present in existence? In my opinion, no.
662. The flood, according to your contention, is intercepted at the dam; well, supposing we remove the dam, what would be the difference in the flood, then, at the mouth of Marrickville Valley;—in other words, how much is the flood held up at the dam? The 1889 flood was held up 18 inches over the centre of the dam, and fell in a cascade on the eastern side. The flood-level in the Marrickville Valley, if I bring to mind the figures properly, was held up 4 feet by the action of the dam.
663. You speak of the cascade—how far was it above low water in Cook's River at that time;—how much was the fall? That was high water—that is, the waters in Marrickville Valley were held up 4 feet above ordinary high-water spring tides.
664. They were held up 4 feet by the dam? Quite so.
665. And if the dam had not been there, the water would have been 4 feet lower at the mouth of Marrickville Valley? Yes, that is so.
666. Have you any estimate with regard to the amount it would cost to put proper sluices in the dam? I estimated that erecting new flood-gates, and lowering the sills of the present flood-gates to low-water mark, would cost £2,012.

667. Would that leave ample discharge? When I wrote this report and furnished it to the Council, it was my opinion that it would leave ample discharge for the flood waters. J. P. Webster,  
Esq.,  
A.M.I.C.E.
668. Do you consider that the only expense necessary at the dam is £2,012? Yes.
669. What would be the cost of your fascine work inside? The fascine work with this scheme would be unnecessary. 1 July, 1896.
670. You propose to close the north-eastern sluice-gates, and to put all your discharging power down at the south-western corner of the dam? No, not under that scheme. The scheme that I furnished to the Council, was on economical lines. It was to take advantage of the existing openings, and to make just sufficient new ones to give the increased water room necessary. Under that scheme, I did not intend to do away with the northern flood-gates. Then there would be the dredging of the river, which would be necessary before the sills were lowered.
671. What do you consider should be the total width of the sluice-gates necessary now? Three hundred feet, that is, for a complete scheme under the system of sluice-gates.
672. You see the fascine bank running from the north-eastern end of the proposed Government bridge; if a fascine bank were placed there, there would require to be a sluice-gate right across the termination of that fascine bank to the southern shore, as shown—it would require to be all sluices? Yes; this would require to be all sluices.
673. Do you approve of reclaiming the V-shaped piece opposite the north-eastern sluices coming down to where it shows on the plan the commencement of the bridge, marked in red, and then making sluice-gates right across from there to the south-western side of Cook's River? Yes, in preference to a scheme which necessitated the erection of sluice-gates in Wollie Creek and on Cook's River, and at the mouth of Marrickville Valley.
674. What, in your opinion, will be the effect of the Government scheme of erecting fascine work round Campbell's property, and dams across Wollie Creek and immediately above on Cook's River, as shown? The effect would be similar to the effect of making the main opening through Cook's River Dam and making the sluice-gates there.
675. Would there be any chance of the insanitary state of things being transferred from Cook's River Dam to above these dams? In my opinion, no, if properly constructed sluice-gates were put in; but if sluice-gates such as exist in the present dam were put in, then there would be.
676. Supposing that water brought from Marrickville Valley were taken down to the intake of the alternative scheme, in fairly heavy rainfalls, would it be able to get away down through the alternative scheme with such levels as we have? It would get away slowly.
677. What would the result be at the end of the intake? The result would be that water at present impounded on the southern portion of the flat would be removed to the centre of the flat.
678. You would have a lake there, you think? Quite so; until such time as the tides would permit of its being drawn off.
679. Have you any figures to show what catchment area drains into Marrickville Valley between the open channel intake of the alternative scheme and Cook's River? That is the water-shed between Cook's River and the intake of the alternative scheme. It would be, approximately, 180 acres. 180 acres would drain northerly into the intake of the tunnel.
680. Is the intake of the tunnel practically on the same level as the Cook's River and of Marrickville Flat? The ground-level at the outlet of the Marrickville Flats, and the ground-level at the centre of the Marrickville Flats, about the position of the entrance to the tunnel, is very much about the same, but I gather from the section that the intake of the tunnel is, I should say, between 3 and 4 feet lower than the ground-level.
681. In general principles, then, is the best flood discharge a covered drain such as would be in a tunnel, or an open channel? Unhesitatingly I say an open channel.
682. Simply because you can get at it? Yes; at the present time, I may state, it costs the Marrickville Council £120 a year to keep the present drain free from road debris and matter brought down in suspension by the waters, and that is only a small drain, but it gives us an idea of what a tunnel, such as that proposed, with a flat bottom would cost to clean if it were covered in for half a mile.
683. What is the fall? 1 in 3,200.
684. What velocity would that give? Something under 150 feet per minute.
685. You mean that it would give something under 2 miles an hour? About a mile and three-quarters an hour.
686. In your opinion what should the fall be? Nothing less than 4 feet per mile.
687. With such a fall as we should have in the proposed tunnel, you think there would be a choke by the tide or by flood, and that the debris would settle, and the force of the current would not shift it? It would be a nuisance.

Tom Stanley, Esq., late Overseer, Excelsior Land Company, Marrickville, sworn, and examined:—

688. *Chairman.*] What are you? I am at present an overseer.
689. In charge of an estate? I have been for the last four years; but I have just left the Excelsior Company.
690. *Mr. Fegan.*] Is that company what is known as the Warren Estate Company? Yes.
691. I think you went over part of the ground with the Committee the other day? Yes.
692. How long has this agitation to have something done in this matter been going on? I think close on ten years.
693. Have you been long a resident of Marrickville? I have resided on the Warren Estate for over ten years.
694. Have you looked at both the schemes that are before the Committee? Yes.
695. What is your opinion with reference to the alternative scheme? I have taken an interest in the matter during my residence in Marrickville, and I may say that about ten years ago we had what was called a progress committee there, in connection with municipal matters, and this question was considered on various occasions for some two or three years, whilst the committee lasted; and it was then, as it is now, the opinion of the older residents, that the scheme propounded by Mr. Webster is the most practical, and most suitable for the locality and the circumstances of the case.
696. Do you think that the proposed Marrickville Dam would be any detriment to the valley? Yes.

T. Stanley,  
Esq.  
1 July, 1896.

- T. Stanley,  
Esq.  
1 July, 1886.
697. In what way? I may point out that that is the position where you stood with the other gentleman when you were there—on the wooden bridge. If the dam were constructed there, I am of opinion that there would be a lake there when there was a heavy rainfall, because the alternative scheme would not be sufficient to take the water off in anything like a reasonable time. This being part of the company's property, of course I have had special opportunities for observing that—it was part of my duty—and I found that the whole trouble seemed to be that the outlet was not large enough to drain that flat in anything like a reasonable time.
698. You say that you have been representing the Excelsior Company for about four years;—has there been any difference in the flooding of that valley during those four years? No. For the last four years, in fact since the 1889 flood, we have not had anything like high floods, we have had ordinary floods. You have seen the effect of the last one by the debris deposited on the street. That was an ordinary flood. That did not block us from getting to Tempe station, but I noticed that with the same amount of rain now, as fell, say, six or seven years ago, the water remains a longer time on the flat.
699. What is the reason for that? I attribute it to the silting up of the river, and the position of the dam.
700. Which makes it more difficult for the water to get away? Quite so.
701. Do you think that dredging the river would be of any service for the drainage of that area? Not unless the dam is removed.
702. Which dam are you speaking of now? The Cook's River Dam.
703. That is where the bridge and the sluice-gates are at present? Yes.
704. What would be the consequence if they were taken away? The water would get away more quickly.
705. And a high-tide would go down the valley? A spring-tide would, I daresay, but I do not think a neap-tide would.
706. You do not think the usual tide would? Not if those fascine banks were made.
707. And in your opinion, the taking away of these sluice-gates would not be any detriment to the valley or low ground there? No; I think it would be a benefit, that is, providing a canal were cut up the flat.
708. Would that be Government or municipal work? I think the cleansing of the river—it being a tidal river—is work for the Government to do.
709. And the draining of the flat? Well, as that affects some five or six municipalities, I certainly think they should have something to say in the matter, and should bear part of the cost either directly or indirectly.
710. Do I understand you to mean that the dredging and deepening of the river is purely Government work, and the expense therefore should be defrayed by the Government? Yes.
711. But the cost of constructing a drain in the flat should be defrayed out of the general sewerage scheme of expenditure? Well, as the municipalities affected are not in a financial position to do it themselves, I take it it should be done on the betterment principle. I think that those municipalities that would be benefited by the construction of the canal should at least contribute towards the interest on the cost.
712. Do you think that the residents in the near vicinity of the flat would object to contribute their share towards the draining of that flat by the municipalities? If it were put upon them as an extra rate, I am of opinion they would. The principal part of the land is owned by large landowners—the Excelsior Land Company, the Haymarket Land Company, and others; there is a lot of it unsold.
713. Is a portion of it Government land? Only a small reserve, which has been dedicated to the people of Marrickville for a park. It is 150 yards from where you stood.
714. Can you tell me the reason why the ratepayers should object to pay for a storm-water sewer going through that flat? I cannot give you any reason why they should.
715. Can you give us any reason why the Government should pay for a storm-water sewer going through that flat? Well, the only reason I can offer is that the municipalities are not in a financial position to do it themselves at the present time.
716. But, rightly speaking, if the municipalities were in a fair position, it is really their work? I am of opinion it is.
717. And, therefore, that does not take away from the municipalities the responsibility of constructing this storm-water sewer? If they were able to do it, I think it fairly comes within their duty.
718. As one of the ratepayers, do you not think it is reasonable that if the storm-water sewer is constructed the cost of its construction should be a charge on the general sewerage-system expenditure? I am of opinion that the cost should be shared by the municipalities that help to cause the trouble.
719. What would your reason be for constructing this channel;—to get rid of the stagnant waters there? Yes.
720. Would you not call that part of the sewerage system in a small way? The storm-water is the source of the trouble, and it comes from the higher ground. You would have to intercept it at about a dozen places if you wanted to make use of the sewer to relieve the flat.
721. It comes from the high lands of the municipalities of Marrickville, Newtown, St. Peters and Petersham? Yes.
722. This drain if constructed, would answer for this flat, as the sewerage will answer for the higher ground? Quite so.
723. Therefore, the cost should be charged to the general sewerage account? I suppose so.
724. You believe that? Yes.
725. You do not think it is fair that the Government should carry out this scheme without being remunerated by those who would benefit by it? I am certainly of opinion that they should not.
726. You are of opinion that if the Government bear the expense of dredging the river and making other improvements necessary, the municipalities on their part should bear the other expense? Quite so.
727. What companies do you say hold land there? The Excelsior Company, and the Haymarket Company, and I think also the Intercolonial Investment Company, but I am not quite sure as to the third company.
728. Three large land companies? Yes.
729. And there is a certain amount of property there not yet sold, in private hands? Yes, in the hands of those companies.

THURSDAY, 2 JULY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

THE HON. CHARLES JAMES ROBERTS, C.M.G.,  
THE HON. DANIEL O'CONNOR,HENRY CLARKE, Esq.,  
JOHN LIONEL FEGAN, Esq.,

FRANK FARNELL, Esq.

The Committee further considered the proposed Improvement of Cook's River.

John Phillip Sharkey, Esq., Civil and Hydraulic Engineer, sworn, and examined:—

730. *Chairman.*] What are you? I am a civil and hydraulic engineer, a licensed surveyor, and a J. P. Sharkey, sanitary engineer.

731. Are you aware of the Departmental proposal that was placed before the Committee, and also the alternative scheme? Yes.

2 July, 1896.

732. Do you desire to make a statement in regard to matters proposed to be dealt with under those schemes? Partly. I do not come here to combat those schemes in any shape or form; but, as I formulated a scheme some years ago which was accepted as being complete in every respect I thought it my duty, and I have been told that it would become my duty, to lay that scheme before this Committee as it would completely remedy the evil of the flooding of Tram Vale without involving any expenditure on behalf of the Government. I have the whole of the evidence in the form of a prospectus that was issued to the landowners on the flooded area, and the shortest way would be for me to read this prospectus as it outlines in the most concise form with the whole of the design and mode of operation under my proposal.

733. You consider it properly sets forth your views in connection with the matter? Quite so.

734. If you consider that is the best way to give us the information the Committee will have no objection? I would preface my remarks by reading a copy of the letter I wrote to the Minister for Public Works, which shows the reason why I appear before you to-day:—

Mercantile Chambers, 187 Castlereagh-street, Sydney, 14 September, 1894.

The Honorable the Minister for Works, Sydney,—

Sir,

Observing that a deputation from the Marrickville Council is about to wait on you in reference to the drainage and reclamation of Tram Vale, situated at Marrickville, by which the Government is likely to be asked to undertake the cost of such works as may be considered necessary by your engineers for that purpose, I do myself the honor to bring under your notice the following facts:—

Competitive designs for the drainage and reclamation of the above area were called for by the local Council in October 1891, in conformity with which I formulated a complete scheme, with plans (the subject of this communication) which were submitted, but not dealt with on account of some slight informality as to the time of lodgment.

In September, 1893, a strong and influential promoters' syndicate was formed with the view of floating a company to carry out the scheme formulated by me, and for the following objects:—

- (a) To acquire by purchase at the then low value all that area situated at Marrickville, known as Tram Vale, or more generally known as the flooded area of Marrickville.
- (b) By means of an efficient and complete drainage system to erect the same into a "model township" where the most perfect sanitary arrangements shall prevail.
- (c) To light the model township, together with a portion of Marrickville, with electricity.
- (d) To subdivide the lands thus acquired to a uniform design, and to sell the same at their enhanced value.
- (e) To secure by legislation the necessary powers (x) to light portion of the borough with electricity (y) to close and divert streets (not main streets) to enable the land to be laid out with uniformity to suit the conditions of drainage to be established, and (z) to apply the betterment system to those lands which the company are unable to purchase.

So as to thoroughly advertise the movement, the prospectus, including details of the works proposed to be carried out, was published in the local newspaper, and lectures were delivered before the borough council when a large assemblage of ratepayers was present, and before the Ratepayers' Association.

This company had every prospect of being a success financially and otherwise, had it been possible to purchase the lands so situated within the flooded area at anything like their fair value, but on treating with the owners it was found that the prices demanded had risen threefold on the intentions of the company becoming known, and therefore the project became impossible for that reason alone.

Besides, considerable opposition was shown to the formation of the company purely on socialistic grounds. At a meeting of the Ratepayers' Association, held on the 2nd November, 1893, resolutions were carried unanimously affirming that the scheme was a huge monopoly and that the work should be carried out by the Government.

For the two reasons above enumerated it was decided by the promoters to merge their company into a co-operative proprietary company, by which means the grounds of socialistic objection would be at once removed and the difficulty attending the purchase of land obviated.

With this object in view a new prospectus was prepared (copy herewith) and published *in extenso* in the local newspaper. Amongst the first to accord their support by offering to surrender their lands under the provisions provided by the cooperative proprietary company were the Excelsior Land Investment and Building Company and Bank, Limited, and the Mutual Life Association of Australasia, while the Joint Stock Bank, Limited, intimated its intention of falling in with the movement when further developed, and the small landowners had shown a disposition to co-operate. These institutions own a large proportion of the area to be reclaimed.

On approaching the smaller owners difficulty was at once met with, as a movement was on foot, headed by the local council, to induce the government to carry out the work of reclamation. At this period a deputation to the Hon. W. J. Lyne, Minister for Public Works, was so far successful in that he directed his engineers to make an inspection of the locality and prepare a report showing the best means of drainage and reclamation. Under these circumstances it was considered useless by the promoters of the Co-operative Proprietary Company to continue treating with the landowners who expected a work of such magnitude to be carried out without cost to them at the public expense. So, further action in the interests of the company has been suspended pending developments.

I understand a report is now being prepared for presentation to you by your engineers and I am sufficiently confident to believe this will take no other shape than that of confirming the scheme formulated by me as the only one possible or natural to the locality. I submit the scheme in book form, formulated by me with plan for the inspection and report of your engineers, which scheme is that on which the Co-operative Proprietary Company is being formed and which was submitted to the Marrickville Council on the 2nd November, 1891.

I would most respectfully submit that a work of this kind would possess nothing of a national character, while the public policy involved in the question is of the greatest importance, as should State funds be extended in affording relief in this case similar action will be claimed for other localities standing in the same position.

For the following reasons it will appear that interference with private enterprise by the government in this case cannot be advocated on national grounds:—

- (a) That not one foot of land within the flooded area of Tram Vale is owned by the State;
- (b) that the expenditure by the State of the large sum of money necessary for the complete drainage and reclamation of Tram Vale, will exclusively benefit the private individuals and companies whose holdings would be increased in value at the expense of the public exchequer;
- (c)

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- (c) that it is within the power and therefore the duty of the landowners themselves, at their own cost, to carry out such works as may be considered necessary, on the co-operative principle, following the example of the reclamation, drainage, and irrigation colonies of America and elsewhere, they being the only persons to be benefited thereby and they receiving the entire profits arising therefrom, in proportion to the assessed value of their holdings ;
- (f) that a complete scheme for co-operation and combination has been placed within the reach of the parties interested which injures no man and reduces no man's rights, and which in the opinion of financial authorities of the highest standing, will enable sufficient funds to be raised by loan for carrying out the whole scheme of drainage, reclamation, and lighting, when effect has been given to its provisions by the combination of the landowners and their registration as a Co-operative Proprietary Company. A glance at the capital value of the holdings affected as they appear in the municipal rate register will prove this ;
- (g) that it is difficult to contemplate the Public Works Committee or the Parliament of the Colony would be likely to approve of work of this nature being carried out by the State under the circumstances enumerated ;
- (h) In the majority of cases these lands were purchased at very low prices, for the express reason that they were low-lying and known to be subject to periodical flooding. It would suit the owners well should public moneys be spent on them to raise their value to that of the adjacent high lands free of cost to themselves.

The only obstacle so far to the floating of the Co-operative Proprietary Company has been the action of the Government in authorising the formulation of a scheme of reclamation by their engineers, which has led the landowners to believe they have inserted the thin end of the wedge and will be ultimately successful in inducing the Government to carry out the works at the public expense.

When their minds are disabused on this question, as I hope they will be, on the occasion of a deputation which is about to wait on you, steps will be taken to continue the enrolment of landowners with the object of completing the formation of the Co-operative Proprietary Company which already has met with considerable success, as instanced by the larger proprietors and companies surrendering their lands in the terms of the Company's prospectus.

I have, &c.,

JOHN P. SHARKEY,  
Civil and Hydraulic Engineer, &c.

In consequence of the action of the Government in taking the matter up, it was useless for me to continue the enrolment of the landowners. Therefore it was stopped, pending the result of that action, and it is for that reason I have come before this Committee to lay before you, first of all, the position the Company stood in, and secondly the scheme.

735. You have now come to the scheme? Yes. I will continue by reading this prospectus, as it will lay before you exactly what the scheme was :—

Capital, £75,000, to be raised by loan or the sale of debentures as required, on the security of the estate to be acquired by the Company.

This sum or as much as may be necessary will be expended on the reclamation works, electric lighting, and the construction of a light line of tramway, all of which are hereafter described.

The debentures will be retired as the sale of lands will allow, and the profits in the form of dividends will be distributed amongst the shareholders half yearly, when the financial position of the Company permits.

All owners of land within the flooded area as defined by the flood-level of 1889 will be asked to surrender their holdings to the Company without reservation, and to accept in lieu thereof shares representing the assessed value of such lands.

These lands, together with improvements (if any), will be valued by competent valuers, but where the value thus arrived at is not accepted by the owner he will have the option to nominate a valuator of public capacity to act in conjunction with the Company's valuator, an umpire being selected before deliberation.

After the deed of association has been executed and the shares allotted, each share representing £10 fully paid up, a board of nine directors will be elected by ballot by the shareholders from amongst themselves to carry out the objects of the Company, three directors retiring each year by rotation, but who will be eligible for re-election.

A Bill will be submitted to Parliament, having for its objects the granting of the necessary powers to the Company to enable streets to be altered, for the application of the betterment principle to all lands within the flooded area not acquired and those outside which have been improved by the drainage and reclamation works, and for other purposes.

In ordering the pumping plant from England provision will be made for the supply of two dynamos, each capable of running 1,000 electric lights of 10-candle power each. No exclusive rights in this respect will be required from the local council, as the Company will be in a position to compete against all comers.

736. That completes the introductory portion? Yes, it does. I may say that this company is not dead yet. We should be willing to go on to-morrow if the Government were to decide not to carry out this work at the public expense, and the large landowners I have mentioned are quite willing to co-operate in the matter.

\* \* \* \* \*

The land to be reclaimed and dealt with comprises about 250 acres, all of which at present is unfit for human habitation. A considerable portion is subject to inundation by spring tides, while moderate rains cause the lodgment of more or less water in the various depressions throughout its extent, natural drainage of any kind being impossible, as practically there is but little or no fall to the outlet at Cook's River. Drains have been formed along the centre of the area, but their utility is limited owing to the slight gradient procurable, and the waters but sluggishly and slowly wend their way to their estuary at Cook's River, affording but little relief.

#### *Cause of land being flooded.*

The name Tram Vale denotes the land to be low-lying in comparison to the surroundings, and thus it becomes subject to inundation by the flood-waters of Cook's River, by the storm-waters falling on the high lands of Marrickville, and by the rainfall within its own area. •

#### *Projected works.*

It is intended to for ever get rid of the flood-waters of Cook's River by constructing an embankment 8 feet 6 inches high, which will be 3 feet above the highest flood-mark, with a puddle wall in the centre, and faced with stone on the river side, to extend from Unwin's Bridge Road embankment to the foot of the Warren Hill, a distance of about 800 feet. The material for the embankment will be taken from the drainage canal hereafter to be described, and the stone for facing same from the excavation for engine foundations which are to be fixed at the foot of Warren Hill. A roadway 66 feet wide will be formed on the top of the embankment.

#### *Catch-water drains.*

For the purpose of dealing with the waters falling on the high lands of Marrickville, having their natural fall towards Tram Vale, catch-water drains, one on each side of the Vale, will be constructed along the slopes, at a sufficient elevation to permit of their being discharged over the crest level of the embankment. These drains will be provided with sufficient fall to ensure rapid flow, and will be of sufficient capacity to carry off the heaviest rainfalls.

#### *Drainage canal.*

In order to effectually drain Tram Vale proper and provide the first most necessary requisite, perfect sanitary conditions for the "model township," a drainage canal will be constructed of concrete topped with brick in cement mortar from Edinburgh-road to the embankment at Cook's River, a distance of about 112 chains. It will be 6 feet deep and 6 feet wide

wide at Edinburgh-road end, and 17 feet deep and 30 feet wide at the embankment, thus giving a fall in its entire length of 11 feet, the coping of the walls being nearly level throughout, following the surface of the ground. It will provide a large storage capacity and permit of the most rapid house and street drainage from every portion of Tram Vale, ensuring the most perfect sanitary arrangements, so that the healthfulness of the locality and its surroundings will be assured—this blot on the map of Marrickville being for ever removed. J. P. Sharkey,  
Esq.  
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737. At the intake of the alternative scheme, how wide do you propose your channel shall be? I think it would be 20 or 22 feet wide there.

738. You broaden it, then, gradually? Yes; it goes from 6 feet at Edinburgh-road to 30 feet at the embankment.

739. You believe that is ample to carry the drainage? Yes; I will prove that to you.

740. Stormwater and everything else? Yes; everything. I have already said that I should have catchwater drains to catch the water on the slope. Now, I am merely dealing with the rainfall that falls within the area flooded.

741. Therefore, this channel which you are describing is not intended to deal with the whole of the stormwaters that now find their way into the Marrickville Valley? Quite so. Now, I want to show you that this canal which I propose to construct along this valley will have a greater capacity than is actually necessary for the purpose of carrying off the rainfall from that valley. The capacity of this canal will be equal to all possible strain that could be put upon it. The land is almost a dead-level right through, and, therefore, the top of the canal will be practically a dead-level right through. The holding capacity of the canal will be 1,530,144 cubic feet, or 9,563,400 gallons, or 42,844 tons of water; pumps at 500 tons per minute would clear the canal in 1 hour 26 minutes; 1 inch of rainfall on 250 acres equals 907,500 cubic feet, or 25,410 tons equal to 51 minutes' pumping by one engine at 500 tons per minute.

#### Pumping-plant.

The drainage water finding its way into the canal will be disposed of by means of compound condensing centrifugal pumping-engines in duplicate, capable of discharging at least 500 tons per minute over the embankment into Cook's River. The pumps will be connected with a chamber forming the terminal of the canal, the inlet to such chamber being provided with screens so that no solid matter of any kind can find its way through the pumps and consequently into Cook's River. A tray, to be worked by crane, will be placed in a chamber in front of the screen sills to receive all solid matter, which will be lifted out into carts for removal to a sewage farm or dépôt. The canal will be flushed out frequently every day, which becomes possible owing to its steep gradient, by the inflow at its head of 50,000 gallons of water. For this purpose a receiving or storage chamber will be provided, forming the extreme end of the canal, which will be filled with water as occasion requires by means of a small direct acting pump to be worked in connection with the larger machinery, with little or no extra expense, the sluice-gate being opened and closed automatically. One engine will be always under steam, and will have the capacity of performing more duty than the greatest rainfall recorded at the Sydney Observatory during a period of 40 years would impose for the area to be drained. Each engine will be worked alternately for a week at pumping, while the second during the same period, if necessary, will drive a dynamo forming a part of each plant with which it is intended to light the model township and a portion of Marrickville with electricity. There will be two distinct plants, each comprising engine, pumps (2), and dynamo, to be worked alternately, so that every reasonable security is provided against a breakdown of any kind, while the cost of fuel and working expenses are reduced to a minimum. During dry periods, when the pumping duty is but light, one engine will work the dynamo and pumps; and as the dry periods extend over more than two-thirds of the year, so in proportion will economy be effected.

742. How much would your channel be below low water on the land wayside of the dam? It would be about 11 or 12 feet below low water.

#### Cost of Works.

An estimate has been carefully prepared which shows the cost of reclamation works, providing for every detail, to be £57,470, made up in the following way:—Canal, £16,500; Cook's River embankment, £4,500; catchwater drains, £8,000; pumping engines and dynamo in duplicate, with engine-shed, &c., £19,000; tramway line, with cars, &c., £5,000; bridges over canal, £600; road and drain diversions, £770; electric lighting installations, £3,100. Total, £57,470.

I may say that in making out the estimate for the catchwater drains it was intended and expected that the municipalities affected, whose lands drain into that valley, would contribute about £4,000 towards the cost of construction of those catchwater drains, and, therefore, the estimate is rather less than the actual expenditure on those catchwater drains would be.

743. *Mr. Roberts.*] Where would your catchwater drain be on the eastern side of the valley? About a section east from the railway line and crossing it approximately where the alternative scheme is shown to pass on the Committee's map; thence, following down on the western side of the railway, it would discharge some distance below the eastern side of Tempe railway station.

744. On the western side where does your contour line run? Approximately parallel with the Marrickville Creek, starting at an elevation of 30 feet, and following the contour until it discharges into Cook's River at a height of about 8 ft. 6 in. above high water mark. I may say, in reference to the figures I have just given, that some of those estimates are much too high for the present time. They are the original estimates:—

The pumping-plant to be provided (over 500 tons per minute, in duplicate) will not be considered exceptionally large when compared with other plants of similar character in use for similar purposes in various parts of Europe and America. When quotations were supplied for the pumping-plant by the manufacturers in England the capacity given was based on a lift of 25 feet, but as the pumps will be performing their greatest duty after, or during a heavy rainfall, when water would stand in the pump-chamber of the canal at, say, 8 feet, thus allowing 17 ft. 6 in. for lift, so in proportion would the capacity of the pumping-plants be increased, or two of less cost be sufficient for the duty required.

I should like to show you that 500 tons per minute is not a large capacity for this particular description of pumps. There are kinds of centrifugal pumps where enormous power is exercised for the purpose of throwing water over lifts 30 feet high, and in recent times Messrs. J. and H. Gwynne, of Hammersmith, near London, have supplied the following power pumps:—

Ferrara, Italy.....	2,100 tons per minute.
Morozzo, Italy .....	710 " "
Rose Hill, Demarara.....	330 " "
Mersey Docks, Liverpool.....	1,200 " "

Therefore, you will see that the capacity of these proposed pumps—500 tons per minute—is not much in comparison with what is done in other places. The principle I now put before you is not a new principle at all, but exists all over the world, and has been used where large areas of land—particularly

J. P. Sharkey, Esq., in England and America—have been completely drained by means of embankments, catchwater drains, and pumps. There is nothing new to me in this design, only in its application to Marrickville. I have had large experience in drainage of a similar character—of areas reclaimed from the sea:—

## AREAS drained and reclaimed by embanking and pumping.

Locality.	Area drained.	Drained by	
		Engines.	Horse-power.
	acres.		
Deeping Fen, near Spalding, Lincolnshire .....	25,000	2	80 and 60
Marsh West Fen, Cambridgeshire .....	3,600	1	40
Misserton Moss, with Everton and Graingely Carrs .....	6,000	1	40
Littleport Fen, near Ely .....	28,000	2	30 and 40
Middle Fen, Cambridgeshire .....	7,000	1	60
Waterbeach Level, between Ely and Cambridgeshire .....	5,000	1	60
Magdalen Fen, near Lynn, Norfolk .....	4,000	1	40
March Fen, Cambridgeshire .....	2,700	1	30
Feltwell Fen, near Brandon .....	2,400	1	20
Soham Mere, Cambridgeshire (formerly a lake) .....	1,600	1	40

I want also to point out to you that the system of drainage I propose is in existence in many places in the world, and I want to mention something in regard to Mr. Darley's alternative scheme. I will, first of all, speak of the last-mentioned. Mr. Darley's scheme is one to which objection could not be taken for arable lands by any engineer who has any knowledge of such works. The principle of it can be mentioned in a few words. He intends to make use of the fall in the tide of 6 feet—which is the difference between the level of the high-water mark and of the low-water mark—for the purpose of draining this area of Marrickville. The difference in tide levels has been used in many places for draining areas and reclaiming them from the sea for arable land; but I would point out to you, as gentlemen of common sense and large knowledge and experience, that 6 feet for draining this valley is nothing and could not properly drain it, or put it in a sanitary state for town settlement. On the Mediterranean, where the fall of the tide is 16 feet, there are large areas, both in Egypt and other countries, reclaimed in a similar manner. When the tide comes in the whole of the drainage is stopped, and the sea is also held back by means of flood-gates. The waters behind the flood-gates are banked up to a height of 16 feet by the flood-tide. When the tide is fully out, and then only, of course, for a short period—when it is at its lowest—the waters accumulated on the embanked area are let off, and that acts as a scour and cleanses the water courses in that period. That is land where there is a fall of 16 feet, but here you have a fall of only 6 feet, and, as Mr. Darley properly says, all this 6 feet of fall is available only when the tide is at its lowest, which is for only three minutes. It is stationary only for three minutes, and, therefore, the 6 feet fall is available for only three minutes and then the tide comes in. Near the turn of the tide, of course, it runs out very fast, as you are doubtless aware.

745. Supposing that the present dam were removed, would there be much difference between the rise and fall of the tide at the mouth of Shea's Creek and the rise and fall of the tide at the mouth of Marrickville Creek? Of course the fall at Shea's Creek would be much greater than at Marrickville; the stream is wider there, and consequently there would be much more get-away for the water. I should think there would be over 2 feet in favour of Shea's Creek.

746. Therefore, the discharge into low water, as shown by the alternative scheme, would probably be 2 feet lower at the mouth of Shea's Creek than at the mouth of Marrickville Creek? Yes; but I would qualify my statement by saying that the tide at the mouth of the Marrickville Creek, either now or at any other time, does not rise and fall 6 feet.

747. We are taking a problematical case, that of the dam being removed? Yes.

748. You told the Committee that in order to take away only the water that falls on the 250 acres of Marrickville Valley you require a canal varying from about 26 feet at the mouth of the intake to about 30 feet at the pumping-station? Yes.

749. If a channel of that width be necessary simply to take the water of Marrickville Valley alone, you would require a considerably wider channel to deal with the whole of the waters that at present find their way in the shape of stormwaters to Marrickville Valley? I think so. In calculating the capacity of that canal it was also intended to act as a storage, and to hold one hour's rainfall. That canal, merely to carry off the waters that would come into it, need not be so wide or so large, but we want, as it is usual to do in such cases, to store one hour's rainfall, and we calculated that at 1 inch to the hour.

750. Do we understand, therefore, that we must regard it also as a storage channel, and not merely as a carrying channel? Both.

751. But do you think that a tunnel 15 feet x 6 feet would carry the whole of the stormwaters from Marrickville Valley and the adjoining municipalities which at present find their way there? I should think it would if it had a sufficient fall. It is all dependent on the fall.

752. The fall is 1 in 3,200? I give you a greater fall than that—1 in 600 and odd.

753. You see that is a very small fall to carry mud through a tunnel? Yes, it is.

754. In general terms, speaking without levels, but from your general knowledge, you think it is probable there would be a better discharge at Shea's Creek than at the mouth of Marrickville Valley? Yes; any person with any experience at all must know that there would be a difference of at least 2 feet. If the waters confined in Cook's River open out to five or six times their area they must fall and give the advantage of their increased breadth.

755. In your opinion is it possible, by any gravitation scheme, to get rid of the water that at present finds its way into Marrickville Valley? None, except by lowering the Pacific Ocean—that is the only possible way. I have thought the matter out myself nights and days.

756. You think it is not possible for any gravitation scheme to deal with it? It could not, unless the falls were in favour of Marrickville Valley. Although I admit there is a difference of 6 feet between the drain here and the outfall at Shea's Creek, the levels of a portion of this flooded area are actually, on an average over 100 acres, 2 feet below high-water mark. Therefore, in reality, Mr. Darley's scheme gives you only 4 feet to deal with.

757. Do you believe it would be wiser to intercept the flood waters on the higher levels, or to make one work to deal with the local drainage of the valley and the storm waters from the heights down the drainage centre of the valley? To let all the waters from the high lands get into the valley and then deal with them at the drainage centre would be less effectual and would over-charge the canal.

758. Have you any great objection to that? I have not, but I may tell you that the area is very extensive, and if you go into a calculation of the cubic feet that would fall on that area to see how you are going to deal with it, you will find that you would require to have almost the most powerful machinery in the world to effectually drain the area by pumping. The rainfall here is phenomenal in short periods. In England it extends over long periods. The general rainfall in England is forty-six and up to 100 inches in some places, but the rain falls here in a short time really more heavily than it does in England. It is very exceptional to have a rainfall of 1 inch an hour in England, whereas we have it here often.

759. Your objection, then, to using the drainage centre of the Marrickville Valley is simply that the amount of water falling on the watershed would render it very expensive to deal with it? Yes, and that the catchwater drains act as ordinary municipal drains in carrying off the rain water from the streets and so forth. The water could be directed to these drains, which are the best drains you could have for carrying off the surface or rain water that falls on the heights. There is nothing unusual in that, and there is not much expense attaching to that, if carried out on the system I propose in connection with this scheme. This system is not a new system. It is in operation nearly all over the world, and I propose to put it into practice here as a system that is universally admitted to be applicable in such a case. Wherever land is too low for ordinary gravitation drainage, you must pump—you must embank and you must intercept the water from the higher land, and that is exactly what I have done here. I may mention what is in existence, as you may know, in England. There is what is called the Erith pumping station on the Thames, near London, a place I am well acquainted with. The Thames at Erith was so low that the spring tides inundated the land all about there. The land there is much more valuable than the land at Tram Vale, Marrickville. Steps were taken, but not as early as might have been expected, to remedy the evil from which that portion of England was suffering, and they constructed a system of drainage there, pumping in the same manner as I speak of here. The pumps are centrifugal. It is possible for a man almost to pass through them and be unhurt. Anything that gets into the throes of the pump and the sumph from which it takes its feeding is carried through it without any trouble. The bore is so great that even sheep and dogs and all kinds of offal and things like that are swept into its throes and carried through the pipes to Erith. At Erith there is what is called a sewage depôt, and all filth that passes through the pumps and pipes is strained and treated as manure, and sold in large quantities. The sale of it has been so immense that I see from reports of late years that the sewage system is nearly self-supporting. I will give you another instance which I have had experience of in connection with large cities drained in the same way. It will be, perhaps, within the memory of some of the members of this Committee that New Orleans, in America, was at one time a hotbed of fever, so much so that people would not attempt to go near the place. I remember well, reading about the plagues of yellow fever in New Orleans. That state of things was continued for years, until the place was decimated. Engineers were brought from New York and they found out the whole cause of it. The water in the River Mississippi was found at spring tides to be actually 3 or 4 feet higher than the main street of New Orleans, near the Post Office, when the tide was in, and it was found that the percolation of water from the Mississippi rendered the houses so damp as to cause the paper to fall off the walls. Immediately steps were taken by the engineers in selecting localities where they could fix sumphs, and they directed four systems of sewerage to these sumphs. They erected pumps, the same as I propose for Marrickville, with great capacity, and they pumped the sewage into tanks, which it diverted by means of large pipes to the Mississippi River, and discharged it below a point in the river from which it was impossible to return to the town. In that way they have rendered New Orleans one of the healthiest towns in America. I was reading a report the other day which shows that the sanitary condition of New Orleans at the present time is as good as that of any other part of America. The same system was adopted at Erith, but at Erith they are not so close to the river mouth as they were at New Orleans, and they store the water that is pumped at Erith until the tide is going out, and the water after being filtered is discharged as the tide is passing out, so that it does not return except in a purified form. If the Government scheme now under your consideration be cast aside, I have sufficient ability to carry out my project, and am backed by men of undoubted standing here who offer to find all the necessary money to carry out my scheme. All I require is to get the consent of the owners of some of the land. When I first went there I could have bought the allotments for 10s. a foot with frontages of 25 feet, and even 30 feet, but the price of some of the lands I have been speaking of in the course of a fortnight went up to £3 or £4 a foot, and I could not purchase them at all. I am sure that if this Government proposal were not persisted in I should be in a position to deal with the owners of those lands and go on with the scheme I have laid before you.

Frederick Gannon, Esq., Solicitor, sworn, and examined:—

760. *Chairman.*] Are you a resident of Tempe? Yes.

761. *Mr. Roberts.*] How long have you resided at Cook's River? I have a 50 years' knowledge of it.

762. So that you are thoroughly acquainted with every inch of the district under consideration? I am.

763. Are you personally aware that something is required to be done to relieve the Marrickville Valley from flood and storm waters? I am, and not only Marrickville. It appears to me that the mistake that has been made is that they have been considering Marrickville and no other part. I have heard a lot of evidence, and it appears to me that it only points to Marrickville Valley, but there is more to consider than that, namely, from Cook's River Dam right up to the Canterbury Dam.

764. What do you regard as the great source of the trouble? The pollution of the river, commencing at Canterbury. There is a tannery there and slaughter-houses, and the river is being continually polluted by dead sheep and dead animals of all descriptions, which are allowed to remain in it. Then there is the drainage from the manufactory at Marrickville. At times when out shooting I have gone up the Marrickville Valley Creek and have seen it as black as ink, and so nauseous that I have had to hold my nostrils with my fingers.

765. Whereabouts was that? At the junction of the Canterbury railway and the Illawarra railway. It is near Mr. Angus' property, and where the Chinese garden is. I have been there many times with my gun,

J. P. Sharkey,  
Esq.

2 July, 1896.

F. Gannon,  
Esq.

2 July, 1896.

F. Gannon,  
Esq.  
2 July, 1896.

gun, and the place was so bad that I had to leave it. That was in consequence of the drainage from the tweed factory. The only means of drainage is a small pipe, and at times the drainage spreads over the land and remains there in a stagnant pool. At the mouth of this particular drain when it reaches the river it forms a sort of bar which interferes with what I may call the navigation of the river, and you have only to put a stick into the banks of the river to be overwhelmed by the stench, which is something frightful.

766. Do you remember Cook's River when it was in a healthy state? I do. I remember Cook's River when I have taken a boat many a time and rowed from where the dam is proposed to be built, and have followed the natural course of the creek up the valley towards Enmore to Smidmore's property near the tweed factory—in fact right up to the Newtown municipal boundary. I knew it when there were salt-pans there, and they obtained salt from the water in the river.

767. How long ago was that? Forty-five years; that creek was an arm of the river.

768. How long has the river been in a polluted state? Since the land boom I may say, when people began to build all round it and to divert the channel. People were gulled into buying what I call a swamp.

769. I suppose they bought the land in times of drought? In times of boom, and without having a knowledge of what the country was like in times of flood. Afterwards when they found out what it was like, some of them deserted their houses; not many were built there, and some have been washed away.

770. Do you know Wolli Creek? I do, well.

771. In what state is it now? It is full of rushes.

772. Is there any difficulty in finding water in it? I could find water in it but other people might not. I have rowed up Wolli Creek in a boat for at least  $1\frac{1}{2}$  mile when there was beautiful water there. My father used to live where Angus' place is now, near the Tempe station, and he had a gardener named Farrell who lived up Wolli Creek and who used to row down the creek  $1\frac{1}{2}$  mile to come to his work. It is now simply overgrown with rushes. It would cost very little to clear it, and it could be made navigable for  $1\frac{1}{2}$  mile, nearly up to what is called Broad Arrow Road. It was a beautiful creek until they put the tanneries there. The water was perfectly pure and sweet at Mrs. Campbell's property, but recently M'Namara's tannery has been there and some boiling-down establishments. They put their refuse on the land and it gets into the creek from which there is no outlet into the river. I was very much surprised to hear yesterday the evidence of a gentleman who said that Wolli Creek polluted the river now. It cannot do that because there is no outlet for it into the river, and it is perfectly grown over with rushes and other things. Recently I walked across it with my trousers tucked up to my knees.

773. If Wolli Creek were thoroughly well cleaned out and dredged, and Cook's River were thoroughly well cleaned out and dredged, you think there would be a great improvement? That would meet all requirements. We do not want large schemes costing £56,000, and elaborate engineering proposals. Let nature have its course. Open the creeks and let there be proper contributories to the river. Let the Government resume the whole of the land in question and give us a 100-foot channel the same depth as the river, and you may snap your fingers at all the engineering difficulties. We do not want the present dam to be removed; that would be an absurdity. The cure would be worse than the disease. If you have a flood-tide with the ocean at the back of it, you know with what force the tide will come up and what it will carry with it. When the tide recedes, it leaves there whatever the force of the water has carried up. We had experience of that at the end of the dam before they made the embankment opposite the hotel, near the dam. The flood waters used to bring the drainage from Shea's Creek and all the tanneries, and used to deposit it at the end of the dam in a sort of half-moon shape, and when the tide receded it left it there, and the stench was abominable. Since the Shea's Creek reclamation work has been done we have a good channel, and we have nothing of that kind now, but that is what we should have if you opened the dam and let the tide leave the stuff there.

774. *Chairman.*] Is there as much rise and fall of the tide at the lower side of the dam, or nearly as much rise and fall there as there is at the mouth of Shea's Creek? There cannot be the same amount, for the simple reason the dam stops it. If the dam were taken away, and the tide had its natural flow, there is no doubt there would be exactly the same.

775. Do you believe there is a difference of 2 or 3 feet between the rise and fall at the mouth of Shea's Creek and at the mouth of Marrickville Valley? Not the slightest difference, except for the dam. If the dam were not there all the lands which have been reclaimed and are now cultivated gardens would be flooded.

776. *Mr. Roberts.*] What are your views on the alternative scheme? It is simply a scheme for draining Marrickville Valley, and does not relieve the pollution of the river. It simply means a large expenditure of money to relieve land which could be more cheaply reclaimed by the Government. I have no doubt that the cost of resumption at the present time would be next to nothing. What is required could be done by making a canal 100 feet wide, and using the material taken out in making the canal to build the embankment. I suggest that the Government should resume the whole area at once.

777. Do you look upon the draining of Marrickville Valley as a work that should be done by the Government or the municipality? No municipality could do it. The draining of the valley simply means draining it for the benefit of those interested in that particular part. The real matter is the pollution of the river, and Marrickville alone pollutes the river with the exception of the dead animals thrown into it between Undercliffe Bridge and Canterbury. The tweed factory at Marrickville causes more nuisance than any other contributory to the river.

778. Do you know where it is contemplated to construct a dam called the Marrickville Dam? Yes.

779. Six feet above high water? The most absurd thing in the world. My experience is that the flood waters from Marrickville are much stronger than those they get from the river. There is a large area, and you will find that Marrickville is flooded before the river has increased 1 foot.

780. Do the waters of the river in flood time run up Marrickville Valley? No; Marrickville Valley is flooded before the river is. There is such a large catchment from Newtown, Enmore, The Warren, St. Peters, and all round, that a heavy shower, two hours rain in the morning, will cause Marrickville Flats to be flooded.

781. There is a lot of water up the valley before the river rises? Yes.

782. Water coming from St. Peters and other places? That is so, and the river cannot carry away the flood water of Marrickville except when the water is low on the other side of the dam. It is not the flood waters

waters in the river which flood Marrickville. Marrickville is flooded when there is no perceptible difference in Cook's River, because the only get-away from Marrickville is the little drain they have got. I have known Marrickville to be flooded for days when there has been no perceptible difference in the river. I believe that some portions of Marrickville are much lower than the river is at the present time, and I think that is the cause of the trouble. What I would suggest is that you should have a channel, not a straight channel, but a channel following the present water-course, and then there will be no expense for bridges because there are some built across the streets already, and the land in a great many cases is of no value. I have no personal interest to serve; I am merely dealing with this matter from a sanitary point of view. In the first place I do not believe that the Marrickville Flats are at all habitable. They never would have been taken up, except that the people brought the land at the time of the land boom, without any knowledge of it. I know that some people paid £50 deposit and then left their buildings on the hands of the building society. They did not know before what they were doing. All this agitation comes from Marrickville. They are doing what they can in their own interests. The people of Marrickville are causing the pollution, and the onus of getting rid of the difficulty is thrown on the council, and they are doing the best they can. I will assist them as far as I can, but my object is to have the work done without any outrageous expense to the country, and, if it can be done apart from engineering propositions, to take a common sense view of it. In addition to constructing a canal 100 feet wide, I suggest that a short Act of Parliament should be passed, giving each municipality—Canterbury, Marrickville, and St. Peters—the control over the river within its boundaries, and power to prosecute anybody throwing animals into it or allowing dead animals to remain in it. The municipal limits are bounded by the bank of Cook's River, and therefore the municipalities have no control over it. I believe it is proposed to construct a dam somewhere near the Undercliffe Bridge. To put a dam there would spoil the navigation of the river at that place at once, and simply flood the land on the other side. I believe that is proposed on the understanding that the dam which now prevents the tides from coming up is to be removed. In that case the cure would be as bad as the disease, because the land would be flooded with salt water instead of fresh. Why should the navigation of the river be obstructed? The river is the resort of picnic parties on holidays, there being a boat-shed a Tempe with 100 boats, every one of which is let out on holidays—the river being navigable up to Canterbury. If you carry out the proposed excavations, and cut the suggested channel up the valley, that is all that is necessary.

F. Gannon,  
Esq.  
2 July, 1896.

Alfred Edward Perkins, Esq., M.D., Marrickville, sworn, and examined:—

783. *Chairman.*] Where do you live? Marrickville.

784. Do you know Cook's River? Yes, I have known it 20 years.

785. Do you believe it is in an insanitary condition? I am sure it is.

786. Is it a menace to the health of the people? Yes, I am certain that it is absolutely injurious and a menace to the health and lives of the individuals living around there at the present time.

787. Do the same remarks apply to Marrickville Valley? Yes.

788. The long resting body of stagnant water is injurious to the health of the whole municipality? Yes.

789. And you, as a medical man, regard the condition of that part of the municipality as serious? Yes. Not only is that so, but during the last couple of years I have taken considerable pains to point out to the municipal councillors of Marrickville and the surrounding municipalities that this portion of Cook's River, from Canterbury, say, to Shea's Creek, carries away the whole of the excreta or the solution of excreta, if I may term it so, of the whole of these municipalities—Canterbury, Tempe, St. Peters, Stanmore, and Marrickville. The whole of these places practically drain into it, and some of them at least, I know, tip their human excreta—that is to say their night soil—not very far from the banks of the river, and you can easily understand that, when a good fall of rain comes, it must wash the whole of this organic matter into Cook's River. Hence it is that we have it silted up in places, and the water of it rendered extremely impure. Twenty years ago, I remember the water of Cook's River was quite clear, there was no stench whatever arising from it, and the places surrounding it were quite healthy and pleasant places of resort for holiday makers and others. But during the last few years, I am sorry to say, the condition has much altered.

790. Now it is more like a sewer than a river? It is indeed. The factories that are in the vicinity of these municipalities no doubt do drain into the area under consideration, and the products from these factories must, to a certain extent, still further render the water of Cook's River noxious to the people about there.

791. You are speaking of Wollie Creek, Cook's River, and Marrickville Valley? Yes. I have been over the place hundreds and thousands of times in the last three or four years, and I have every possible knowledge of it. It has been my lot during the past week to go into houses to visit patients where I had almost to walk on stilts or swim.

792. That generally describes your view of the case, I suppose? Yes.

793. Is it possible to directly trace any cases of sickness to the pollution of the river? I believe it is possible in very many cases to trace illness to nothing else but the stagnated, polluted water lying about the domiciles of the patients. The whole of the low-lying area during wet weather is covered with a dense miasmatic fog.

A. E. Perkins,  
Esq., M.D.  
2 July, 1896.

TUESDAY, 7 JULY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.	CHARLES ALFRED LEE, Esq.
The Hon. CHARLES JAMES ROBERTS, C.M.G.	JOHN LIONEL FEGAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	THOMAS HENRY HASSALL, Esq.
The Hon. DANIEL O'CONNOR.	GEORGE BLACK, Esq.
HENRY CLARKE, Esq.	FRANCIS AUGUSTUS WRIGHT, Esq.

FRANK FARNELL, Esq.

The Committee further considered the proposed Improvement of Cook's River.

Sydney Robert Lorking, Esq., Mayor of Canterbury, sworn, and examined:—

- S. R. Lorking, Esq. 794. *Chairman.*] You come here in your official capacity as Mayor of Canterbury? I do.
- 7 July, 1896. 795. Are you aware of the Departmental scheme first submitted to this Committee, and also of the alternative scheme? Yes.
796. You desire to make a statement? I do. After viewing the plans of the proposed works submitted by Mr. Darley for your consideration, I may say, that in the first place, I am greatly disappointed to find that the scheme, as shown on the plans, does not affect the district of Canterbury. To my mind it appears to be a scheme dealing entirely with Marrickville. In the district of Canterbury we are suffering from the insanitary state of the river, which is certainly very offensive, and we were in hopes that any scheme which was submitted through your Committee to the Government to carry out, would be one that would give us some relief in this respect. The principal things that we require are, first of all that the insanitary condition of the river should be removed, and that the river should be made navigable. Looking at the scheme prepared by Mr. Darley, we find that he proposes to remove the dam at Tempe, and to carry out certain works along the banks of, and to deepen the river; but he proposes to erect another dam higher up the river near Undercliffe Bridge. We consider that by a dam being erected there, the nuisance from which we are suffering would simply be perpetuated. It would be removed from Tempe and thrown back to Canterbury. Cook's River we look upon as being a national or a state waterway, which is beyond the control of the local authorities, and we consider that it is therefore the duty of the Government to put it in proper order. In my opinion the nuisance from which we are suffering—not only the offensiveness of the river, but also the flooding from the river—is caused by the silting up of the bed of the river, owing to the erection of the dam at Tempe, also by the growth of reeds, and by fallen timber along the banks, which accumulate all floating refuse matter. This matter is collected along the banks, and during the long term of dry hot weather, it remains there festering in the sun, and that is a very great nuisance, and is a menace to the health of the population.
797. Do you mean this insanitary state of things applies to Wollie Creek and Cook's River, contiguous to the dam at Tempe, or does it apply to the higher reaches of the creek and river? I am alluding to the portion of the river which is within our own boundary.
798. Do you mean us to understand that Cook's River, from the dam at Tempe, right up to where the Canterbury municipality is on both sides of the river is in an insanitary state all the way? Yes.
799. And with regard to Wollie Creek, how far up do you consider that that is in an unsatisfactory state? I could not undertake to say, because my knowledge of Wollie Creek is not sufficient to allow me to make a statement in regard to it. We also consider that the water of the river being dammed back at the old sugar-house in Canterbury, keeping the fresh water in a stagnant condition, is also another source of danger to the health of the inhabitants, because I think it is a well known fact that fresh water when allowed to remain in a stagnant condition must become very offensive. We think that if the dam at Tempe be removed, and the sea-water be allowed to ebb and flow, causing a current, that would remove the whole of the difficulty. During flood times the water that comes down Wollie Creek, which meets the flood-water from Cook's River at an angle, causes the water in Cook's River to be thrown back up towards Canterbury, thus causing the lowlands in the vicinity to become flooded. There is no doubt in my mind, that consequent on the depth of the river bed being lessened by the silt, it does not allow the water to flow in its natural state, but if the dam at Tempe were removed and the water were allowed to flow out in the same manner as it did before that dam was erected, the silting up would not occur, and, therefore, the flooding would not take place. To put the matter in a few words, I think the main thing we want, is, that the river be opened out, so that it would be what we might term a navigable river—that, as a matter of fact, it should be allowed to revert to a state of nature. My acquaintance with the river does not extend over a great number of years, but there are gentlemen present who have known it for a great number of years, in fact almost from the time when the dam at Tempe was erected, and they will be able to tell you what condition the river was then in; and it is that condition which we think the river should be allowed now to revert to.
800. You used the term "navigable";—what do you mean by that? So that an ordinary boat or small steam-launch could travel up and down the river.
801. Supposing the dam at Tempe were taken away, have you sufficient local knowledge to tell us how far the tide would then reach up Cook's River? I should imagine that it would reach up to Enfield.
802. Then you would have salt water running to that part of the eastern portion of your municipality? Yes.
803. Have you any idea what effect that would have with regard to the submergence of the adjoining land? I do not think that that would submerge adjoining land to any extent, more especially if the river-bed were deepened by dredging, to allow it to carry the volume of water that would come in. I may mention that some gentlemen here present knew the river when the tide did flow up.
804. You will see from the plan before you that permitting the tide to reach even as far as Undercliffe Bridge, would necessitate a long reclamation, extending almost all round Campbell's property; and the same sort of thing would obtain to a greater or lesser extent as you passed up the valley of the river? But I think the banks of the river within our own district are not flat, as they are in that portion of the river.
805. It would be less, no doubt, in some instances? It would be considerably less.
806. You do not then approve of Mr. Darley's scheme of placing sluice-gates on Wollie Creek, and near Undercliffe Bridge? No.
- 807.

807. Do you approve of the scheme otherwise? Yes, as far as I am able to judge.
808. That is your objection to it? That is the principal objection. Of course we would also like to see the work continued all up the river; and the banks of the river in our opinion require defining.
809. Where is the dam near the sugar-house? The sugar-house dam is about 2 miles up Cook's River, from a portion of the eastern boundary where we join the municipality of Marrickville.
810. Do you know when that dam was built? I do not; but I should imagine that it was built about fifty-five years ago.
811. You have no knowledge of the time of its erection, but you believe from the best evidence you can get that it was built between fifty and sixty years ago? Yes.
812. Do you regard Cook's River as the storm water discharge for your municipality? Yes.
813. Does any of the water from any portion of your municipality reach Marrickville Flats? No.
814. Therefore you are not interested in the alternative scheme? No.
815. It is of no value to you? Not the slightest.
816. Do you regard Wolli Creek as a storm water discharge for any portion of your municipality? Yes.
817. Can you offer us any opinion with regard to whether Wolli Creek will continue to be a storm water discharge? I decidedly think the storm water discharge will continue.
818. Into Cook's River from Wolli Creek for all time? Yes.
819. How do you deal with your sewage at Canterbury? It is allowed to flow into the gutters.
820. And from there it finds its way into the river? Yes.
821. Is that above or below the sugar-house dam? Both above and below it.
822. How do you deal with your night-soil? It is removed.
823. By the pan system? Yes.
824. Is there a proposal to connect Canterbury with the metropolitan sewerage system? Yes, I believe there is.
825. Where do you remove the night-soil to? To a place within the municipality.
826. Is it on the watershed at Cook's River? Yes, it is.
827. How far is it from the river where you deposit your night-soil? I think,  $\frac{1}{2}$  a mile or more. I may state that the greater portion of it is taken away, and used as a fertiliser in the gardens.
828. Do you sell it? No; it is removed and used for cultivation purposes.
829. Also on the watershed of the river? No.

S. R. Lorking,  
Esq.  
7 July, 1896.

Jeffrey Dennis, Esq., Alderman of the Borough of Canterbury, sworn, and examined:—

830. *Chairman.*] What are you? I am a tanner.
831. *Mr. Clarke.*] Where do you reside? Canterbury.
832. How long have you been residing in Canterbury? Eleven years.
833. Are you aware of the two schemes now before the Committee? Yes.
834. What is your opinion about the alternative scheme;—would it benefit your municipality at all in any way? It does not affect our municipality at all.
835. It affects only Marrickville, St. Peters, and some other places? Yes, Tram Vale.
836. Do you approve of Mr. Darley's other scheme as shown on that plan? Yes, with the exception of the proposed dam.
837. You do not approve of the proposed dam? I do not.
838. Do you think it would be injurious to the good working of the scheme to have dams at Wolli Creek and further up? It certainly would in Cook's River.
839. I suppose that ultimately Canterbury will be connected with the metropolitan sewerage system? Not the low levels, so far as I know.
840. A portion of Canterbury will be connected with that sewerage system? Yes, I think so.
841. What do you think is the best thing to be done in the public interest? Make Cook's River a tidal river.
842. Do you mean by that to remove the old dam at Tempe altogether? Yes.
843. What would you substitute in its place? A bridge.
844. But with the removal of the dam and the erection of a bridge at or near the site of the present dam, how would you prevent the high tides or the storm water from overflowing the lowlands in the neighbourhood of Wolli Creek and the lower parts of Marrickville? At present the floods at high-tide must rise over the dam or sluices before they can get away. The river is about half-tide.
845. But what could prevent the lowlands from being flooded? They are flooded now. There would be nothing to prevent that unless some banks were built to prevent it.
846. One thing they intend to do under the present scheme is to prevent the lowlands from being flooded? I do not object to that. My main objection is the construction of a dam at a site in the Canterbury municipality.\*
847. Then so far as Canterbury is concerned, it might answer very well, but you think that if the dam at Tempe were removed the Government should construct embankments to prevent the flood-waters and high tide from overflowing the lowlands? I always understood that all lands under high tide belong to the Government; the contrary is a revelation to me.
848. But at Marrickville a great deal of the lowlands are built upon? Yes.
849. The people who built those houses may have gone there in dry seasons without due thought, and imagined that it was a good site for building; but they being there, do you not think it would be a fair thing to have some means of preventing them from being flooded out? In reference to that matter, I think that new-comers certainly should be warned of the flood-mark.
850. But what about those who are there already? Well, theirs is a very unfortunate position to be in.
851. Still, as they are there, and have built their houses there, would it not be necessary for something to be done to prevent their being flooded either with salt-water or with storm waters? Well, they are already flooded regularly, and my opinion is that it would be better for them to be flooded with salt water than with sewage.
852. Do you think it would be better for the Government to resume those lands altogether? I think so. I have no interest in that particular part other than the public health, which is, I think, greatly menaced at that particular place.

J. Dennis,  
Esq.  
7 July, 1896.

853.

\* NOTE (on revision):—\* I wish to mention that I also said: Most people were guided by their experience in this matter. The present dam is acknowledged to be the cause of the trouble, still it is proposed to perpetuate the evil by building another. I think the cost of the proposed new dam would go a long way towards remedying any trouble that may be caused by allowing the tide to rise as far as the sugar-house dam.

- J. Denniss, Esq.  
7 July, 1896.
853. Do you think, in the event of this or any other scheme being carried out at considerable cost, the various municipalities, such as Canterbury, St. Peters, and Marrickville, should contribute something towards the cost? Well, Cook's River is a national river. It is beyond our control. We dare not spend any money on it. The Government will not give us any control of it.
854. You think, then, it is the duty of the Government to do that at the public expense? Yes, certainly, as it is wholly a national river.
855. Are there many manufactories on the banks of Cook's River at Canterbury? Only one, I think, working at present.
856. A tannery? Yes.
857. Any wool-washing establishment? No.
858. Is that tannery at Canterbury? Yes. There is also a tannery on Wolli Creek.
859. You think, then, that in the public interest, and to prevent the probable spread of disease, something should be done to remedy the defects you now complain of? Yes.
860. *Chairman.*] How far up is Cook's River running now—is it running at the sugar-house dam? The river is not running, but there is a little by-wash at that dam.
861. Above that, I suppose, it peters out altogether? It is still water. It is practically still water from Tempe to the second dam, and then beyond that again.
862. Does Cook's River run freely, not at flood-time, at the sugar-house dam? There is a wash there now of about 6 inches by 12 wide running freely, but if the dry weather continues that will cease. It diminishes almost daily, and it would cease to run in the course of five or six weeks.
863. And the quantity of fresh water which will come down Cook's River will not be sufficient to flush it? In flood-time it would be abundant.
864. But not after three months' dry weather? No.
865. Very soon after the rain has ceased and the flood has gone down, the river sinks away? Yes.
866. *Mr. Clarke.*] You would only depend, then, on the wash of the tide? Yes.
867. Would that be sufficient? Better than the plan proposed.
868. But it would not be sufficient? I think it would for many years, because our population is not very thick. You, Mr. Chairman, were asking the Mayor about private property along the banks. I have during the last few days been interesting myself in that question. I fancy that Mr. Darley anticipates trouble with those private property-owners, but I think if you were to call them here as witnesses you would find them almost unanimously in favour of tidal waters coming in.
869. *Chairman.*] Without fascine banks to keep the tidal waters off their property? Yes; the banks are comparatively high from where Mr. Darley's scheme terminates to Canterbury.
870. Do you believe that there would be any objection on the part of owners of property from the sugar-house dam down to the boundary of Campbell's property, were the Government to remove Cook's River Dam at Tempe to enable Cook's River to make its way, as it did originally, up the valley of the river, without erecting any fascine-banks to keep the water off the adjacent properties? Generally, I believe, they would be favourable to the tidal water rising.
871. Can you suggest any way in which we could get a definite expression of opinion in regard to that? By calling as witnesses the people interested. Two people would cover very nearly the whole distance. One would nearly cover it on one side, and two very nearly the whole of the distance on the other side.

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John Quigg, Esq., Alderman of the Borough of Canterbury, sworn, and examined:—

- J. Quigg, Esq.  
7 July, 1896.
872. *Chairman.*] What are you? I am a landowner at Canterbury; I have been living there more than forty-eight years.
873. Do you know Cook's River? Yes, well.
874. Have you heard the evidence of the Mayor, and Mr. Alderman Denniss? Yes.
875. Do you agree with that evidence? Yes, I do; the whole of it.
876. Do you think they were wrong in any way? They were slightly wrong as to the date of the erection of the dams. It is rather misleading to say that the sugar-house dam was erected fifty-five years ago. The dam at Tempe has been erected about fifty-five years; but I remember the river within the last forty-eight years when the tide flowed up to Hilly's Crossing, and even above it; that is on the boundary between Canterbury and Enfield, and between 4 and 5 miles from the dam which Mr. Darley proposes to put in at Undercliffe Bridge. I have seen the tide rise 10 inches at Hilly's Crossing. The crossing I refer to is the one that runs straight to the Burwood station. The banks of the river in several places were nice little sandy beaches. Fresh water causes reeds and other plants to grow, but salt water has a tendency to remove all vegetation. Of course when the river gets choked with these plants it runs much more dead. When it became known that this Committee was inquiring into the proposed improvement at Cook's River, I considered that the most important thing would be to have the salt water coming up the river. We get rain there pretty often, and there is a very big volume of water running down the river at times; and if it could come down the river there, and without the obstruction of reeds and dams, it would be better. A dam 10 feet high stops the water, and it runs more sluggishly along its whole course, and reeds grow on the banks. I know a place where I used to swim, and where the water was so deep that it was over my head; but that is a Chinaman's garden now. If the salt water were allowed to come up, we believe that it would prevent reeds from growing on the banks, and that when there was a flood the flood-water would scour out the river. It always has done so. The Cup and Saucer Creek is not a very large creek, but it runs pretty well seven or eight months in the year into Cook's River. There is nothing to obstruct the running of that creek, and it keeps the place clear. No sewage stops there. The banks of the river are principally good banks; there is stone in many places. From Canterbury up, the river has good solid clay banks, not at all likely to be injured by the influx of the tide. Cook's River is not like the Clarence or the Hunter River, where the land is chiefly composed of *debris* from the mountains. The banks of Cook's River seem to be good solid clay and shale, and most of the banks are above high-water mark. I know that in the case of one grant, 100 feet above high-water mark was reserved; and I think there would be no difficulty about the land question. As far as any land which I have adjoining the river is concerned, I should be pleased to sign any agreement with the Government. I should be pleased to have the salt water coming up; it might injure vegetation, but the advantage would be much more than the loss. Less than thirty years ago you could bathe in Cook's River,

River, but not many people would care to bathe in it now. I have caught sea mullet right up at Hilly's Crossing. Any person who can remember Cook's River forty-eight or forty-nine years ago, as I can, must know that it was very different then from what it is now. The village of Canterbury was able to support four hotels forty-five years ago, and it was a very brisk place; there was more population there then than is now about Marrickville. It has begun to get thickly peopled again, and it would be very quickly peopled again if Cook's River was in the same state as it was then. If a man had 50 acres on the banks of the river, even if 25 acres had salt water alongside, he would be better off than having the river as it is now.

J. Quigg,  
Esq.  
7 July, 1896.

877. Do you know why the dam at Tempe was built? Not from personal knowledge; but from what I have been told I think it is about fifty-five years since that dam was built.

878. Who built it? I do not know.

879. Who built the dam at the sugar-house works? One of the Lucas'. I do not know whether it was the Hon. John Lucas or his brother William—I think it was William.

880. Why was it built? Because the Sugar Company wanted to get the river water made fresh. The salt water used to corrode their boilers, and the dam was put in to stop the salt water coming up.

881. That was after the Tempe dam was erected? Yes, ten years after.

882. Do you know why the Tempe dam was built? Only from hearsay.

883. What is the hearsay? The hearsay is that it was built for a roadway. When the sugar-works dam was built the people were all pleased to see it, because we were sure of getting fresh water then, and it has been used for domestic purposes.

884. The building of the dam at Tempe evidently did not prevent the salt water from coming up, or there would be no need to build the sugar-works dam? Certainly not, because the salt water will come up if it is allowed to do so.

885. What is to prevent the salt water from coming up? There are flood-gates.

886. There have always been flood-gates in the dam at Tempe? Yes.

887. Of course if you lift up the flood-gates when the tide is up, the salt water will run up? Yes.

Mr. Joseph Wren, Canterbury, sworn, and examined:—

888. *Chairman.*] What are you? A carpenter and joiner.

889. You have heard the evidence that had been given? I have.

890. Do you agree with it in general principles? In general principles I do.

891. What point of difference is there? I do not know that there is actually any difference.

892. Do you think any of the witnesses were wrong in what they said? No; but I think they might have said more to strengthen their argument, because, judging from my experience of the river, I do not think that fascine work would be necessary above the Illawarra Road. I think that the banks are sufficiently high from the Illawarra Road to the source of the river to contain the tidal waters that are likely to flow, unless something over and above the common should happen.

893. You are speaking from a general knowledge of the locality? I am.

894. You have not taken any levels? No, I have not.

895. Therefore, you make a statement only in accordance with what you believe to be the case? From observation of the river. I believe that if the obstructions to the stormwaters were removed, the whole cause of complaint would also be removed. Timber growing on the banks of the river has been allowed to fall into the river, and that, of course, causes the silt to accumulate there, and prevents the wash of the flood-waters when there is a flood in the river from carrying it out to sea, and I have noticed during the last few years the trouble appears to be aggravated, simply by reason of that fact, and more so on account of population beginning to congregate all round the entrance to Cook's River, and the making of roads. The snags and the accumulation of weeds growing in the river prevent the flood-waters from carrying the silt out to sea as they originally did. There is a vast difference in the appearance of the river now from what it was when I first knew it.

896. You agree with what has been said by the other witnesses, but you desire to emphasise the fact that the flood-water is not likely to do much serious damage above the Undercliffe Bridge? No; there is no possible way in which it can. I think that the intention of constructing a dam at Tempe in the first instance was to supply the city of Sydney with water. It was erected by the Government.

897. You think that was the intention? I am almost certain from hearsay that it was originally intended to supply the city of Sydney with water; but it was a failure.

898. It may have been built in order to form a portion of the road to Illawarra? Of course, they had that in view, but I believe, from what I have heard old hands say, that the supplying of the city of Sydney with water was also an object in the first instance. Of course, after the Sugar Company removed their works from Canterbury, the sugar-works dam got into a state of disrepair, and now it is simply a track for foot passengers.

Mr. J. Wren.  
7 July, 1896.

James McBean, Alderman of the Borough of Canterbury, sworn, and examined:—

899. *Chairman.*] You have heard the evidence that has been given? Yes.

900. Do you agree with it? Yes.

901. You believe that is right in general principles? Yes, I do.

902. Do you desire to add anything to what has been said? I do not know that I can add very much to it. I have been living at Canterbury for about forty-four years, and I can endorse every word that has been said. So far as the silting up of the river is concerned, that has been increasing from year to year. I remember swimming in the river when I was a boy, when the bottom of the river was sand, but now if you dive you come up covered with black slime and mud.

903. Are you referring to the river above or below the sugar-works dam? From the Tempe dam right up to the head of the river. On the boundary of Canterbury and Enfield, there is only just a drop of water where you could at one time row a boat.

904. Is there much pollution of the river from factories or tanneries or anything of that kind in the vicinity? There is only one tannery at Canterbury, and one at Wolli Creek.

905. Are there any other manufactories? No.

J. McBean.  
7 July, 1896.

- J. McBean. 906. Is there much pollution at Cook's River from the tannery on it? No; I think they pump all the liquid into the sand in the paddock, and it percolates through the sand and cannot pollute the river much.
- 7 July, 1896. 907. You think there is not much pollution of Cook's River from any manufactory or tannery? No, there is not.
908. You think the insanitary condition of the river is consequent on surrounding population? Yes.
909. Do you know anything of Wolli Creek? Yes.
910. Do you know the buildings on Wolli Creek? I know that there is a tannery there, and also there are some poultry-farms and piggeries on the bank of the creek. During some portions of the year there is no water in the creek, and when a storm comes the refuse of those places is washed into the creek and down into the river.
911. You believe that the tannery there does affect the river? Yes.

Mr. Frederick Davis, Inspector of Nuisances, Borough of Canterbury, sworn, and examined:—

- Mr. F. Davis. 912. *Chairman.*] What are you? I am Inspector of Nuisances for the Borough of Canterbury.
- 7 July, 1896. 913. *Mr. Fegan.*] You have heard the statement of the mayor and aldermen? Yes.
914. Have you anything to add to it? I know very little about the engineering matters in connection with this proposed improvement. All I am prepared to say is about the insanitary condition of the river, and the health of the inhabitants adjoining it. I have been Inspector of Nuisances for the Borough of Canterbury for a little more than twelve years. I have seen a wonderful change in the river in that time, caused by the flow of sewage matter from the various streets.
915. You are speaking of your own municipality? That is all. I know the river extends a long way through the Borough of Canterbury.
916. I understand you to say that sewage matter from the streets finds its way into the river? It does, directly.
917. Is there any fever or other sickness traced to the condition of the river? We have a good deal of sickness. Last summer in particular, we had an outbreak of typhoid fever at Rosedale, which is a portion of our borough, adjoining the river. It was principally confined to children, who, in my opinion, contracted it by bathing in the river. They drank good city water, and the house premises where they lived were perfectly clean, and I could come to no other conclusion than that they contracted the fever by bathing in the river.
918. Have you had any medical evidence on it? The doctors have complained greatly about the state of the river.
919. Have you looked at either or both of the schemes now before us? No, I have not.
920. You know nothing about the schemes? I would not like to give any opinion upon them. My own impression is that if the tide came up and washed all the obstructions away, and cleaned the river out, it would be much better than it is at the present time.
921. You have nothing whatever to say against either of the proposed schemes? I would not like to say anything either in favour of or against it. I am not well up in engineering matters—I do not study them at all.
922. You are not giving an opinion as an engineer, but as a citizen? As a citizen, I should like to see the river cleaned out, and the dams taken away.
923. Is there any point of this scheme to which you object? I am not prepared to express an opinion upon it. I should like to see the dams removed, and the tide come up and go down. According to people who have lived there longer than I have, the tide used to flow up a considerable distance, and then the river used to be pure. The river within our boundary is filled up, and has become a stagnant pool, or, at any rate in summer time it is a stagnant pool, filled with filthy matter. Dairy cows come from Enfield, Ashfield, and our own borough to drink there, and according to medical evidence that has been one very great source of the spread of typhoid fever. I am sure that the milk of any cows drinking water there cannot be pure, and they do drink it because they have nowhere else to go.
924. How far from the river are the nightsoil paus emptied? So far as the nightsoil collected in Canterbury is concerned, it is used for manure in market gardens, and the nearest garden to the river which takes it is nearly 2 miles away from the river, and the others are farther away from it.
925. And it is impossible for it to find its way to the river? I think so. As they use it, putting it in the ground, I think it is impossible for any portion of it to find its way into the river.
926. Have you any regulations as to where it shall be deposited? Yes; it is under my control.
927. Is it taken by a contractor? Yes; and he puts it in certain places where I tell him to put it.
928. You have an opportunity of seeing that those regulations are complied with? Yes, I do; I would not permit of anything in the shape of a nuisance.
929. You have not had to direct attention to those regulations being broken? Yes, I have, in one or two cases, some years ago; but that was a considerable distance from the river. A man erected a kind of dam, and put a considerable quantity of the stuff in it. It was in the bush, and I did not see it; but when it was discovered we had it removed. But it would not have reached the river.
930. Notwithstanding the breach of regulations in that case, it could not do any harm to the river? No, it could not; it was too far away.
931. Do you think that the tannery has any effect on the river? The owners of the tannery carry out the regulations strictly; they let nothing flow into the river which would contaminate it. But where anything from the tannery reaches the river, the water is salt, and not water the cows drink.
932. Is there any possibility of refuse from the tannery getting into the river? The refuse from the pits is pumped into dams, and finds its way by percolation some 200 yards before it reaches the river.
933. But ultimately it goes into the river? Yes.
934. There is no mistake about that? It finds its way into the river ultimately.
935. I suppose you have not heard complaints about nuisances caused by woolscouring? There is no woolscouring on the river, and has not been for a considerable time.
936. Is there not one such establishment on Wolli Creek? There used to be one, but I think it has been removed to Alexandria. There was considerable trouble in Rockdale about it, and law proceedings took place. Mr. M'Namara was the owner of it.
937. You have not heard of any complaints against the tanneries? No; nothing I could interfere with at all events.
- 938.

938. But there are many things you hear of which you cannot interfere with? There are many things I hear about of which I take no notice, for I find that people are very apt to complain when there is very little to complain about. Mr. F. Davis.  
7 July, 1896.

939. Is there much stir in your municipality with regard to this scheme? Yes; most people I speak to about it wish to see the salt water coming up.

940. Why? Because the fresh water is very offensive in the summer, and even the action of oars in rowing boats causes a terrible stink.

941. Do you think that if it were possible to make Cook's River a tidal river that would get rid of the nuisance? No doubt it would.

942. Has it been a tidal river? Not in my time. I believe the flood-gates were opened a few months ago, and I was told that the river flowed a foot over the sugar-house dam, and if it did it would reach considerably higher up than that.

943. How long has this agitation been on foot to make the river tidal as far as Canterbury? Of course it has risen more since this matter has been referred to this Committee, but it has been spoken of for a considerable time past.

944. Have you lived long in the district? About twenty years.

945. And during all that time there has been no movement to approach the Government with a view of making the river a tidal one until this scheme was submitted to the Committee? I do not think there was any agitation. It was merely a matter of general talk.

946. But if there is anything that affects the welfare of the municipality the aldermen are generally so much on the alert that they bring the matter before the Government? What is generally done takes the form of public meetings.

947. Therefore, we may come to the conclusion that until this scheme was submitted to the Committee this matter has not affected the minds of the aldermen or the people of Canterbury? I will not go so far as to say that. Within the last five years there has been a little agitation, but it has not reached the Government. A number of years ago there were a number of Government surveyors employed surveying on the river for some months, and that allayed the agitation. We were in hope that something was going to be done. We were given to understand that the banks were to be straightened, and the Cook's River Dam to be removed, and that the tide would come up. At that time the agitation was growing.

948. Were there any public meetings? I do not remember any public meetings.

949. In what way did the agitation show itself? I heard it in talking.

950. Merely in talking? Yes. They are a quiet, rather retiring people in Canterbury, and it takes a lot to stir them up. They bear evils remarkably well.

951. And as far as this scheme is concerned, you can express no opinion, and your evidence is that, so far as your municipality is concerned, they wish to see Cook's River made a tidal river up to Canterbury for the purpose of getting rid of the sewage in the river more than anything else? We should like to see it beyond Canterbury, but for that purpose only.

952. But you are only speaking for your own municipality? Yes.

953. That is really your evidence? Yes; I can only speak as to the insanitary condition of the river, and consequent sickness. We have a great deal of sickness in dry seasons in consequence of the bad state of the river.

954. That evidence has been confirmed by the medical opinion you have received from time to time? Yes, it has. All the sewage matter from districts round about finds its way through Canterbury into the river.

955. *Mr. Trickett.*] You, as Inspector of Nuisances, can tell us if Canterbury comes within the metropolitan and suburban sewerage scheme? Only one portion of it—the upper end of it, towards Ashfield and Petersham.

956. Supposing that that portion of the scheme were adopted, would that relieve you from the trouble you now seek to be relieved from by means of this river? It would, to a certain extent; but there is a considerable portion of Canterbury on the other side of the river, for instance, which that scheme would not affect at all.

957. I suppose that the greater portion of Canterbury comes within that sewerage scheme, does it not? No, only a very small fringe of it—the upper end of it. The greater portion of our borough extends 5 miles beyond it.

958. But does not the drainage of the greater portion of the populated area of Canterbury find its way into Cook's River? The whole of the drainage of Canterbury finds its way into the river.

959. Is that not a source of pollution? Yes.

960. Why do not the Canterbury people agitate to have that portion of their area which is within the metropolitan sewerage area brought under that scheme? I remember the scheme being submitted to the Council some years ago, and it only served the top end of Canterbury. I do not see how you are to get the lower portion of Canterbury connected with that sewer at all.

961. But do you not think that if this river continues to be the outlet for all your sewage it will always remain a nuisance, whether the salt water comes up or not? I think that if the salt water came up it would take it away.

962. It would help, but it would not be a perfect cure? It might not be, but we are thankful for small mercies.

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Sydney Robert Lorking, Esq., Mayor of Canterbury, sworn, and further examined:—

963. *Chairman.*] Do you desire to say anything further? I desire to say that Mr. Fegan put a question to Mr. Davis to which he was unable to reply, and I should like to reply that, to my own personal knowledge, about two and a half or three years ago, my Council joined with that of Marrickville to commence an agitation on this very question. We had a conference, and the result of it was a deputation to the Minister for Works, Mr. Young, and he promised to give the matter consideration. I think he also promised to do something, but that something has not been done. On the 18th May last, we had a public meeting in Canterbury to deal with this question. That was previous to this matter being referred to this S. R. Lorking,  
Esq.  
7 July, 1896.

S. R. Lorking, Esq., this Committee. At that meeting certain resolutions were passed, a copy of which I have here. The resolutions are as follows:—

7 July, 1896.

That the residents of Canterbury view with alarm the insanitary condition of Cook's River and its tributaries. That Cook's River being under the entire control of the Government, they be requested to take immediate steps to abate the nuisance, and preserve the health of the inhabitants of this district.

That in the opinion of this meeting the proposed application of the betterment principle to one of the national rivers would be unjust, and this meeting respectfully protests against the same.

That the foregoing resolutions be forwarded to the member for the electorate, for presentation to the Hon. the Minister for Works.

964. *Mr. Fegan.*] Who was the member for the electorate? Mr. Varney Parkes. The whole of those resolutions were carried unanimously at a fairly representative meeting held at Canterbury, and I may state that a week or two previous to that I was present at a meeting, having the same object in view, at Marrickville, at which similar resolutions were carried.

WEDNESDAY, 8 JULY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. CHARLES JAMES ROBERTS, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

The Hon. DANIEL O'CONNOR.

HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.

JOHN LIONEL FEGAN, Esq.

THOMAS HENRY HASSALL, Esq.

GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

FRANK FARNELL, Esq.

The Committee further considered the proposed Improvement of Cook's River.

Miss Mary Louisa Campbell, Wanstead, near Tempe, sworn, and examined:—

Miss M. L. Campbell.

8 July, 1896.

965. *Chairman.*] Where do you live? At Wanstead, near Tempe.

966. Near the junction of Cook's River and Wolli Creek? Yes.

967. How long have you lived there? My family have been living there a considerable number of years.

968. And you have lived there nearly all your life? All my life.

969. Are you aware of the proposal placed by Parliament before the Committee? I have some idea of it. I am not absolutely seized of the whole thing.

970. You have an interest in property lying at the junction of Cook's River and Wolli Creek? Certainly.

971. Have you any interest with regard to the proposed works beyond that on the eastern side of Wolli Creek? No.

972. Of what extent is your family's property there? It is supposed to be 121 acres, exclusive of roads.

973. Can you inform us why the dam was put across Cook's River at Tempe in the first instance? I believe it was to conserve the waters of Wolli Creek, which were fresh, and to prevent the entrance, I suppose, of the sea-water.

974. To keep the water of Cook's River fresh? To keep the water of Wolli Creek, which has always been a fresh stream, fresh, and to prevent the entrance of the sea-water in any way into the river.

975. Originally Cook's River went far up beyond where it is at present intercepted by the dam? Naturally I should suppose so.

976. Before the dam at Tempe was erected, would Cook's River have overflowed some of the property which your family own at the junction of Cook's River and Wolli Creek? I think that that is a question better suited to an engineer than to me.

977. In point of fact, the dam was built before you had any knowledge of the place? Yes; I have only known it with the dam as it stands at present.

978. Supposing Cook's River Dam at Tempe were taken away, and a free passage were permitted to the river at all times, would that be satisfactory to the people above the dam? Certainly not.

979. Would it be satisfactory to you, who are the owner of property there, if a fascine bank were erected around your property? I do not think fascine banks are very much good, because they fret away in time.

980. Supposing a fascine bank were so constructed that it was a permanent block to any inundation of your property by salt water, do you consider it would have any detrimental effect on your land? It might be an advantage.

981. Supposing that a satisfactory fascine bank were placed round your property to prevent it from being inundated, and the Tempe Dam were taken away, thus allowing Cook's River to run unimpeded along its original course, would it be a benefit to your property or not? No, I think it would be a disadvantage.

982. Why would it be a disadvantage? Because there is no provision made for keeping the water of the creek fresh.

983. You believe that it is more advantageous to your property to have fresh water in Cook's River than salt water? I should think so.

984. That is your first point of objection to Mr. Darley's scheme, is it? I think that if the dam were taken away, and no provision made to prevent the sea-water from entering Wolli Creek, we should find the want of fresh water a very great disadvantage.

985. Why do you require fresh water there? Well, in times of drought we have had occasion to use it for household purposes, but the Government, by the erection of the railway bridge and embankments at Tempe, has rendered the stream unfit for use. Last year we should have had occasion to use it if the drought had lasted a week longer, and we should have been unable to use it.

986. Are you aware that there is a wool-scouring establishment, or tannery, further up Wolli Creek? I am not personally aware, but I have been told there is one.

987. Might not that affect Wolli Creek, and make it unfit for use, irrespective of what the Government may have done? I do not think it ever affected it very seriously—at any rate, not so much as the entrance of the salt water into the creek has done. This has prevented our letting our property on the  
Creek,

Creek, because fresh water was necessary for wool-scouring. We should have let our property for wool-scouring or fellmongery purposes, I think, but the water being rendered salt by the dam not acting as it should act, has prevented our letting that land, and it has damaged us in that way, besides making the water unfit for use for household purposes.

Miss M. L.  
Campbell.  
8 July, 1896.

988. You are speaking only of fresh water in Wollie Creek? Yes.

989. The presence of salt water there would prevent your utilising your property for fellmongery and other purposes? It has prevented us. The waters of the creek have been rendered salt by the blocking of the channel of the river by the southern railway embankment, and the northern embankment has also affected the flood-waters, or the great surplus of waters that come when there are heavy rains, and impede the water and send it back. In 1861 additional flood-gates were erected to carry off the water. They were found to be not efficient, and, on the representations of my father, in 1876, Mr. Moriarty put in other flood-gates, on the southern side where the channel of the river is. These were effective, and the land was scarcely, even in very bad weather, flooded at all—I mean any of the lowlands, I am not speaking of our property alone. Subsequently the Government built the Illawarra Railway, and whilst it was in course of construction my mother pointed out to the engineers in charge the damage that would probably result. They laughed at the idea; but as years have gone on they have proved that she was correct in her view that the construction of the embankments—of the southern embankment particularly—would spoil the effect of those new flood-gates, because the waters could not get a free flow out as they had been accustomed to do. Previous to the erection of the Illawarra Railway embankments at Tempe, the flood-waters would go off the land in six hours, and the land was not then subject to such floods as it has been subject to since the building of that railway. I believe that 60 miles of country is drained by Wollie Creek, and that Cook's River drains very much more. The flood-waters run up to the embankments, and when they get there only a certain proportion of them can get out, owing to the very narrow entrance to the space left under the railway bridge. The outlet is not at all deep; indeed, it is very shallow there. Before the flood-waters get in sufficient volume to the flood-gates, especially the southern flood-gates, the tide changes, and the waters come back again. The land on the northern end of the dam is high land, and therefore, the waters cannot go over that as they do over the lowlands, and they must come back and flow over the lowlands. I may also mention that the Government have raised the road near the Tempe railway station, and there have been reclamations on the northern side of the river, to the left of what is known as Unwin's Bridge Road. There has been an extensive raising of the land there; and all that helps to flood the lands on the southern side.

990. Do you know what was done with the material that was taken from where the cylinders of the bridge were erected? It was put on the mud flat, across which the railway bridge is carried.

991. Cylinders were erected in the middle of the stream at Cook's River? Yes.

992. Do you think there was any shallowing of the bed of the river by the construction of the railway works? The railway works blocked up the river. The river across from side to side would I should say, be over 200 ft.

993. You say that in the construction of Unwin's Bridge Road, and the bridge on that road, some works were carried out which delayed the disappearance of the flood; did the embankment or approach to the bridge there affect the flooding? I do not think it affected it so much as the railway. It is the fact of the waters not being able to get away through the railway opening which causes the extensive flooding. I do not think the erection of the bridge on Unwin's Bridge Road has had very much to do with it, because when the water gets through that, there is a large field on our land on to which the water comes. It flows right back and rests there. It forms a sort of pool and remains there until it gets through under the opening.

994. Have the floods been worse in the valley of Marrickville Creek since the construction of the Marrickville Railway? I do not think that to any great extent Marrickville has been very much worse. It is the lands immediately about the river that suffer so much—not Marrickville.

995. If it affected your land on one side of Cook's River, it is reasonable to suppose that it would affect Marrickville Flats on the other side of the river? In a measure; but I think that the flooding of Marrickville is in a great measure due to waters coming from Benmore, Stanmore, and other places being brought down by formed drains and channels and other means into the Marrickville Valley.

996. The floods from another watershed? Yes. During the recent rains I particularly noticed that the Marrickville Valley was flooded before the lands immediately about the river were flooded. The water came down from the watershed at Stanmore and other places into the river, and flooded Marrickville Valley before the lands near Tempe were flooded.

997. You mentioned a period when on the southern side of the dam sluice-gates were put in—that was prior to the construction of the Illawarra Railway? Yes; in 1876, I think.

998. Did you feel the effect on your property of those sluice-gates at once? Certainly—they were a very great advantage.

999. Did you have any heavy falls of rain between the time those sluice-gates were erected and the time the Illawarra Railway was constructed? Yes; I think we had heavy rains. We have rain very heavy locally at times when it does not touch other places.

1000. Can you tell us how long Cook's River took to fall, passing through those sluice-gates, before the railway bridge was erected;—how long it was before the river was back in its bed, and off your land? About six hours.

1001. How long would it take for the same amount of rainfall to clear away now? It would take weeks and months before the final effects were gone.

1002. But how long before Cook's River sank back into its channel again, and left your land free of water? Not the whole of the water; but it takes quite a week, I think, for the river to get back on to the surface which it now occupies, because it was not always so high. Before the railway was put there, and dammed the waters back, there were at times 18 inches in parts, and 4 feet in the channel of the river, and scarcely ever more than that.

1003. Do you contend that land that was cleared of water in six hours prior to the construction of the Illawarra Railway, now takes as many days to clear? Quite as many days, before all the water is drained off.

1004. Do you approve of the proposed dams with sluice-gates at Wollie Creek and Cook's River, near Undercliffe Bridge? No, I do not think that is at all a good scheme. I do not see the advantage of it.

1005. It lets the salt water up to those two points, which you object to, as you have already told us? Yes. I object to the salt water.

Miss M. L.  
Campbell.

8 July, 1896.

1006. Will you tell us what you would approve of? Well, I think that as so much money is to be spent on the improvement of Cook's River, the southern railway embankment should be altogether removed, and replaced by open archways the same as the sewer across our property. Of course, it would have been a much greater advantage if the river had been bridged from shore to shore, instead of the Illawarra railway being constructed there with embankments on the northern and southern shores while the bridge is over a mud flat.

1007. Do you mean that sluice-gates should be put right across? No; but to put an open bridge right across from bank to bank, or open archways the same as the sewer which crosses another portion of our property.

1008. You believe it would be unwise to allow the salt water to pass beyond the present Cook's River dam? Yes.

1009. How do you propose to carry out works at the Tempe dam to intercept the tide? I should leave the dam as it is now, with perhaps extra flood-gates in it of an improved pattern, and I should lower the sill or floor of the flood-gates. If the flood-gates act properly the salt water cannot get in.

1010. Do you think there should be sluice-gates in the Tempe dam or bridge, whichever happens to remain there eventually;—do you think the salt water ought to be allowed to come past Tempe dam at all? I do not think so.

1011. Neither into Cook's River nor into Wollie Creek? No.

1012. Therefore you propose to intercept it there? Yes.

1013. You would intercept it there by means of sluice-gates? I would not allow the salt water to enter the river there in any way, because it does damage—it destroys all the pasture lands when the floods come. As it is, the waters of Wollie Creek cannot get away, because they are blocked back by that southern embankment.

1014. Above that, what do you propose to carry out? The pollution of Cook's River has been mainly caused by the drainage from Marrickville.

1015. You propose to clean the river out, I suppose? Yes; I would dredge the river.

1016. And I suppose you would put something at the mouth of Wollie Creek to direct the current straight down to the dam instead of making its way partly into Marrickville Valley—we have been informed that Wollie Creek has a tendency to make its way up the Marrickville Valley? Yes; it goes back; it is blocked by the railway—that is the surplus water in flood-time.

1017. You propose to direct that down straight towards the Tempe dam? Yes.

1018. What would you do with Marrickville Flats? I should have those iron drains taken away altogether. As Marrickville Flats drain such a considerable area, I should intercept the water that comes from Enmore and other places before it could get down so low, and would take it across country, instead of draining all that watershed into Cook's River, which is already blocked by the railway embankments. I should not bring that water into the river at all, but provide some other way of getting rid of the water before it could get into the river, because after the flood-waters have gone down, all the backwater from Marrickville comes into the river, and it is certainly not pleasant. It has made the river very unpleasant. Instead of being a clear stream in which you could see the sandy bottom, it has become a most dreadfully offensive pool. Drainage of all kinds—solid substances, and house rubbish—comes down into the river. At present it is daily and hourly flowing into the river. That causes all the trouble there. It has polluted the river, and rendered it unpleasant for any one going on or passing it.

1019. You are aware of large populations settling on various portions of Wollie Creek and Cook's River? Yes.

1020. That has not resulted from the pollution of the stream? As far as I can recollect it, the upper part of Marrickville, before that drain was constructed, was always very offensive, and the river was then clear. Although there was a large population about Enmore and Staunmore, the drainage did not come into Cook's River then. The stream was clear, and people did not suffer any unpleasantness from it. In the olden days a flood was looked upon as an advantage, because it brought enrichment to the land. In days gone by I suppose we were years without a flood, and especially when the southern flood-gates were erected, the advantage was very noticeable. But after the railway was made there, even the smallest quantity of water seemed to be thrown back over the land however small the quantity of rain that fell. Since the railway has been constructed I have of late years known the river to overflow its banks three times within a fortnight.

1021. *Mr. Humphery.*] Do you know the whole of the watershed for which Cook's River, above Tempe, is the outlet? Cook's River drains a considerable area of country.

1022. Would not the whole of that country contribute to the pollution of the waters of Cook's River? Occasionally the river was not clean, owing to the wool-washings at Canterbury, but not in the terrible way it is now. The flood-waters coming down would clear the river, and perhaps for some years there would not be anything like that again. But the drainage from Marrickville causes a daily—hourly—pollution of the river. The pollution of the river is chiefly about Tempe, especially at the outlet of the drain from Marrickville. Above Undercliffe Bridge the river is not at all unpleasant, even where the sewer crosses it is not so unpleasant.

1023. Your property commences about the Undercliffe Bridge, does it not? Yes.

1024. *Mr. Trickett.*] To what extent is your property affected in flood time—out of your total acreage how many acres are submerged? I could not tell you how many acres are actually submerged; but since the railway has been there we have had one very bad flood. I do not remember, and none of our servants who have lived there before I was born remember, the flood having ever been so high before. Though they have had what they call high floods, still the flood never reached such a height, or was of such extent as that flood which occurred since the railway has been constructed. The land is subject to flooding now after almost every rainfall since the railway has been constructed.

1025. A large proportion of your property? The lower flats about the river.

1026. If the Tempe dam were removed, and the salt water were allowed to flow up and mix with the fresh water, and submerge your property, would you consider that a benefit or otherwise? I should consider that a very great damage. Our lands are all agricultural, almost up to the bank of the river—in fact I may say up to the bank of the river they were fit for agriculture until the railway was built.

1027. If the salt water were let in, it would render that land absolutely useless for pastoral purposes? Yes.

1028. I ask the question, because that is a scheme which has been suggested by people higher up the river, and I want to ascertain from you whether you would not consider that a substantial injury to your property? Certainly it would be a most grievous injury—an actionable thing. 1029.

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1029. *Mr. Clarke.*] Do I understand you to say that you would like to have the Tempe dam removed altogether? No: I should consider the removal of the Tempe dam a very serious injury.

1030. You would like the present Tempe dam to remain as it is with some improvements? Yes, with improvements; but I do not think that those improvements would be of any great service, because the railway embankment keeps the river always fuller than it used to be prior to the construction of the railway, besides blocking the free discharge of the flood-waters from the river and creek.

1031. But I understood you to say that you would prefer to have the river water near your property fresh? Yes—not to have the salt water let in.

1032. But how would you keep the salt water from coming into that portion near Wollie Creek, except it were closed up altogether? The salt water had no entrance from the outside. The river may have been a little brackish. I do not know what condition the stream was in originally, because it is so many years ago that I think very few people, even the oldest amongst us, would remember it. The flood-gates open from the river side into the other side, and of course when the tide is down, they open automatically. The river water did not enter the creek. Each seemed to flow out independently of the other, in a measure.

1033. You think, then, that the proposed fascine banks would not be beneficial? They would not be of the least benefit, because they would wear away. Of course, if the river were often in flood, the constant flooding of the land would wear away the soil. The soil has been washed off our land by the continuous flooding since the railway was built.

1034. I think, if I understood you correctly, you said that since the formation of the railway embankments the flood-waters from Wollie Creek do not get away so freely as they did formerly? No, they do not. They go up to the opening under the railway bridge which is narrow, and they cannot get out before the tide changes, and they flow back again on to our land. Instead of going off in one sweep and in a few hours, as they did in days gone by, they flow back again and remain for many days.

1035. And that, to a certain extent, causes an obstruction of Wollie Creek with rushes and other material? It has caused Wollie Creek, of course, to be filled up with rubbish, in a measure. It cannot get an outlet for the rubbish coming down after every rainfall; and as the weather gets calmer, and the rain ceases, the water there has no impetus as before, and this stuff is deposited at the entrance.

1036. The railway embankment does not give such a free discharge to the flood-waters as there was before? Certainly not; it is the cause of the whole trouble. Since the erection of the flood-gates in 1876, there was very little flooding in the river, and that, perhaps, only after ten days' rain; but now the river never gets to its normal level, and therefore the flood-waters flow back in consequence of the obstruction caused by the Illawarra Railway embankments, especially the southern one.

1037. *Mr. Roberts.*] You come before the Committee as an opponent of the scheme at present under consideration? Yes; I am opposed to taking away the dam; I think it would be a serious injury; and I do not see that any good could be gained by putting a dam at Undercliffe Bridge, nor at Wollie Creek. They did not need these things before a railway was constructed. The creek was not at all brackish. We constantly used the creek water in very hot seasons for household purposes, and for watering the cattle; in fact we relied on it in a great measure; and if the railway had not been constructed, there would have been no necessity to put a dam or anything like that at the mouth of Wollie Creek, because the water remained fresh of itself. The drainage from the watershed was of course always fresh water, without any salt water coming in at all.

1038. Are you not aware that under what is known as the alternative scheme it is not proposed to remove the Cook's River Dam at Tempe? I know there is a second scheme proposed; but I do not know whether that includes the removal of the dam or not.

1039. What you wish the Committee to understand is, that you have a strong objection to the admission of the salt water into Cook's River? Certainly.

1040. Is there any other fact in connection with the scheme that you wish to make known to the Committee? I think that the reclamations outside of the dam prevent the river from being as low as it used to be outside the dam. Land has been reclaimed over which the river used to flow. At the change of the tide before the reclamation works were begun there, that land which is now reclaimed by the Government, was, I think, subject to flood twice a day; it was a mangrove swamp. The tidal waters used to come on it twice a day; but the Government reclaimed that land, and narrowed the channel, and when they had done that the water in the narrowed channel rose considerably higher than it used to do before. That also, I think, retards the free flowing away of the waters of Cook's River, because if the floor of the dam were lowered now the water from outside might enter the river. In regard to Marrickville Valley I may say that I should intercept any water from the high lands beyond Marrickville Valley, and I would not let it come into the Marrickville Valley Creek at all. The water falling on the Marrickville Valley Creek itself, I should bring down into Cook's River by a deeper channel. The old channel has been filled in to a great extent by people who bought land there. That was a great mistake.

Frederick Gannon, Esq., Solicitor, sworn, and further examined:—

1041. *Chairman.*] I understand that you wish to add something to the statement you made the other day? I have listened to the evidence given by Miss Campbell. I agree with a great deal she has said. I think that owing to my more advanced years, I can add to the information which she has given. There is no doubt that to a certain extent the railway embankment is a great cause of complaint. Where the opening in the railway embankment is at the present time, there used to be a mud flat. It was not the channel of the river there. Miss Campbell has said that in consequence of the embankment being there, the waters have flowed back on to her family's land. The bridge should have been erected where the natural channel was, and not over the mud flat. The bridge ought to have been further south.

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1042. You say the natural channel of Cook's River was further south from where the bridge was erected? Yes, in an exact line with the mouth of Wollie Creek. An opening should have been made where the one is now, and there should have been another opening over the channel.

1043. Was the embankment thrown over the main channel? Yes. The channel is blocked up at one side and open at the other. The channel runs on the western side of the river, and not on the southern side at all. Wollie Creek and the channel formed one, in fact the channel ran up Wollie Creek. When they built the railway they blocked the natural channel and put in the opening on the mud flat, farther north or farther east.

1044. In other words, they forced the water further north than it used previously to go? Yes; and, as Miss Campbell has said, that has caused the flood-waters to go back. There are flood-gates at one extreme end

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end of the dam, and flood-gates at the other extreme end. There was a sort of channel going to the north side of the dam, and there was a channel going where the Tempe Refuge is. There were two channels, and the result of putting the embankment where they did put it, and of putting the bridge where it is, was to spoil the flow of water that used to go to the farther flood-gates, and consequently the water could not supply both flood-gates with the same amount as it did before. The opening in the railway embankment was made only equal to the opening of either of the flood-gates, and, therefore, if there had been another opening made on the farther side of the river from Sydney, as well as the other opening, then the flood-gates would have been able to do their work, just as they did before the embankment was made; in other words, there is not that get-away for the water that there was before the embankment was made. The mistake was in putting the opening in a wrong place. I suppose that was done for the sake of economy in connection with the construction of the railway; but they have blocked the channel.

1045. You state that where the railway embankment now stands was, prior to the construction of the railway, the main waterway for Cook's River? The natural channel. The embankment has been put on the deepest part, and the opening made on the shallowest part.

1046. The channel ran originally, as it were, to the mouth of Wollie Creek, and then hugged round to the southern side of Cook's River? Yes.

1047. Your contention is that the bridge ought to have had another span or two? There ought to have been another opening where the channel is, because having only one opening spoilt the effect of two flood-gates. The same quantity of water cannot go through the one opening as used to go through the flood-gates. There ought to have been another opening on what is called the southern embankment. There is one thing I should like to mention which has probably not occurred to a great many people. I daresay the Committee are aware that Unwin's Bridge is much shorter now than the original bridge there was. I knew Unwin's Bridge when it extended from the northern side to where the white railings are on the other side. It was the full width. You can now see the piles that were cut off when the Government made the new bridge, and where the roadway was filled in there. That was the natural width of the river, and the narrowing of it has caused the silting up of the river where it is now proposed to excavate and give the river its original width. If that is done, I believe it will have a very beneficial effect. Unwin's Bridge, when I knew it first, was over 200 yards long.

1048. *Mr. Fegan.*] How deep is the water under that bridge now? Where the stone piers are, I think, the deepest part is from 6 to 8 feet.

1049. *Mr. Humphery.*] Do you say that the old Unwin's Bridge was never under water in flood-time? I know it has been.

1050. Do you not know that it has been under water 4 or 5 feet? Yes; but I have known that occur since the erection of the dam. In former years I have rowed in a boat up to Wanstead.

1051. Therefore, floods in Cook's River are not a novelty? But they have never had anything like that since the new flood-gates were put on the southern end of the dam.

1052. *Chairman.*] Supposing there were ample sluice-gates in the dam—say, increased four or five times what they are at present—do you think you would have heavy floods in Cook's River again? They will have floods in Cook's River unless there is an opening made in the railway embankment. No matter how many openings you make in the dam, the water cannot get away there unless you have another opening in the railway embankment. I am certain from my knowledge of the river, I having lived on it for many years, that if the floor of the flood-gates were lowered a foot or two the floods would get away much faster, and would not remain on the lands above the dam so long as they do at the present time.

1053. But how much difference have you seen between high water on the lower side of the dam and a flood on the upper side of the dam? I have seen the water flowing from the upper side right over the dam.

1054. How much fall would that be? Two feet at least.

1055. Therefore, it is clear that the dam held the floodwaters up 2 feet anyhow? Yes.

1056. If the rise and fall of the tide on the lower side of the dam is some feet more, then you would have the dam holding up the floodwaters at least 5 or 6 feet? It is between low-water and high-water where the damage is caused, that is to say, the floodwaters cannot get away while the tide is making; but, from the moment it goes out, for about six hours, the floodwaters can get away.

1057. *Mr. Humphery.*] What you say is that, unless there were an additional opening in the embankment, it would be useless to provide a greater discharge in the dam itself than at present exists? Yes; I am quite certain of that.

1058. *Chairman.*] If a larger discharge area were provided at the Illawarra Railway embankment, would the sluice-gates at the present dam be useful? I think so; since the flood-gates were put on the southern end, near the Tempe Refuge, I have never known the water to be on the dam, and we have had heavy floods too. I have never known it on the dams since the railway was constructed either, but the water is a little slower in getting off the flats, and as Miss Campbell has said, it will perhaps remain a week instead of only a few days.

1059. *Mr. Fegan.*] Have you considered the alternative scheme? Yes, I have.

1060. Do you think that that will give the relief which the people of Marrickville are asking for? It will give relief to the people of Marrickville, but you want to relieve other people besides those at Marrickville. My idea is to open the natural creek that was originally in the Marrickville Valley, and make it a branch of the river. They will never have any cause to complain then, because as the river recedes the floodwaters will come from Marrickville.

1061. You think that that will get over the difficulty? Yes; Marrickville will always be flooded until the river is lower than Marrickville.

1062. You think that that is the general opinion of the people about there? I think so. If there were a good channel there, there would be a good outlet for the stormwaters and surface drainage, which are now kept back as there is not sufficient space to permit of their going into the river.

1063. Do you think that a law should be passed to prevent people from building on these lowlands which are not drained? I think it would be a good thing to pass such a law, because people do not seem able to protect themselves. They squat down on a place and erect dwellings there, and it is not until a storm comes that they know what they are doing. I think I said before that I thought it would be a good thing if the Government were to reclaim all that land.

1064. *Mr. Hassall.*] From your knowledge of that locality, do you think that if sufficient openings were made

made in the railway embankment to carry off the flood-waters, that would practically answer all requirements? Yes, and if the excavations were also made as proposed in the Government scheme. I do not think that the people would then have any cause for complaint.

1065. You think that all the land above the railway bridge would not then be subject to inundation in the same degree as it is now? I am sure it would not.

1066. Were there not floods there in days gone by before that railway bridge was erected? Yes.

1067. Did they do any particular damage? They put deposits on the flats all round, the same as every other river in the country would.

1068. What has been the effect of building the bridge there? It has retarded the getting away of the stormwaters, that is all. They do not get away as they used to do.

1069. And the water remains longer on the land than it otherwise would do? Yes; we had the full scope of the river before the railway embankment was put there.

1070. How many additional arches would you suggest should be put in the embankment? I think it would require only an opening of about 60 feet—about the width of the channel—and I do not think it is wider than that.

1071. That is the original main channel? Yes.

1072. Which you say has been blocked up by the embankment? Yes. If there were that opening there the flood-gates would be able to do their work properly.

1073. *Mr. Roberts.*] Do you desire the removal of the old Cook's River Dam? Certainly not. I consider that there would be no end of actions against the Government, unless a special Act were passed to save them from actions for damage done to the lands which have been reclaimed, and which are now used for pastoral or agricultural purposes and which would be spoilt by salt water.

1074. I suppose that if the salt water were admitted a large area of land would be flooded? There is no doubt that it would be destroyed.

1075. And consequently it would make it a very expensive job, whatever scheme were adopted? Very expensive. I suppose Mrs. Campbell would be the largest sufferer. Her land extends from Wolli Creek on one side up to Undercliffe Bridge on the other. The whole of the flats which she lets for grazing purposes would be destroyed, and that is a very considerable area. I can remember the time when I have walked over that land and have been able to scratch the natural salt off the surface of the land, but you see nothing of that sort now.

1076. Would many landowners, who have rights to a fresh-water river, be able to make a claim against the Government? I think so, all the way up to Canterbury. I believe it is proposed to build a dam at Undercliffe Bridge, and if the Government do that I think it would flood all the lands above it, and the landowners would claim damage on account of the flood-waters being thrown back upon their lands.

Joshua Percy Josephson, Esq., A.M.I.C.E., Civil and Consulting Engineer, sworn, and examined:—

1077. *Chairman.*] What are you? A civil and consulting engineer.

1078. Have you a knowledge of the two schemes at present before the Committee? I have.

1079. Do you desire to make a statement in regard to them? More especially with regard to the main Departmental scheme—not the alternative scheme. I know these schemes very well. The alternative scheme will no doubt relieve the Marrickville Flats, but only to a certain extent. It will not do all that is required. We want the whole thing dealt with under what I may call a natural scheme.

1080. Do you approve of the main Departmental scheme? Yes.

1081. And the reasons that have been given by the Government officers are the reasons that would sustain you in your approval of it? Yes.

1082. I will ask you then about the alternative scheme;—do you know anything about the storm-water discharges in various suburbs? I do.

1083. Do you know what fall the storm-water discharges have? They vary. For instance, if you want a storm-water discharge to the alternative scheme the fall should be about 1 in 1320—that is, 4 feet per mile.

1084. What is the plan? About 1 in 3,200.

1085. What is that? About  $1\frac{1}{2}$  ft. per mile.

1086. You state that it ought to be twice that? Yes, at least.

1087. If the drain discharged intermittently, and there were a fall of  $1\frac{1}{2}$  ft. per mile, what would be the result? That would not drain the flat.

1088. But supposing the storm-water entered it what would be the result? When it got to a certain height it would be choked. The velocity of that would be 143 ft. per minute.

1089. With an intermittently discharging drain the storm-water would stand for a considerable time in it? Yes, when it got to a certain height.

1090. And what would become of the matter in solution while it was standing in the channel, it would sink, would it not? It would sink certainly.

1091. And when it had sunk would a velocity of 143 ft. per minute clear the sewer of the stuff there would be in it? It certainly would not.

1092. What would be the result? It would be partly choked; the sediment would remain in the channel.

1093. Do you know anything about the storm-water discharges in connection with the city? I did.

1094. Has any difficulty been experienced with regard to the deposit of sediment in them? I should not like to say anything as to that.

1095. Supposing that silt were deposited in the tunnel, how would they get it out if the velocity of the current were not sufficient to shift it? It would have to be cleaned.

1096. How would they clean the tunnel? By going inside it and cleaning it. There would not be a sufficient force of current to clear it out. To shift sand requires a velocity of about 4 ft. per mile.

1097. Do you know the amount of catchment area of the water that is at present discharging into the drainage centre in Marrickville Valley? Marrickville Valley itself is about 1,700 acres.

1098. Have you any information to show the amount of water that would seek the intake of the alternative scheme and the discharging capacity of the tunnel in relation to the amount of water that would require to use it from such an area? Eight inches fell in twenty-four hours in May, in the flood year, and, allowing an absorption of 25 per cent., it would take about fifty-one hours to discharge.

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Josephson,  
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A.M.I.C.E.

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A.M.I.C.E.  
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1099. Running full time 4 inches would take twenty-five hours, and 2 inches would take twelve and a half hours? About that.
1100. But inasmuch as it is not running full time, it being choked by the rise of the tide, 2 inches of rainfall on that watershed would take thirty-seven and a half hours to get through; is that so? About that.
- It will, of course, vary a little.
1101. If 2 inches fell on that watershed in twenty-four hours, and had to find its way out through that tunnel, it would take thirty-seven and a half hours to clear the flat? About that. From statistics I have obtained, I find that the heaviest rainfall we had was 2·2 inches in one hour. That was on the 25th February, 1873. In the great rainfall of May, 1889, there fell 16·78 inches in four days. I mean on the area near Cook's River.
1102. What are we to understand is your attitude with regard to the alternative scheme;—from an engineering standpoint is it likely, in your opinion, to be effective? I do not think the alternative scheme will do at all.
1103. You think it has not enough discharging capacity? It will not relieve the flat by 2 to 3 feet. There will always be from 2 to 3 feet of water there. The in-take of the tunnel is, I think, 2 feet above low-water mark to start with, and it comes within low-water mark at Shea's Creek.
1104. What area of the valley is there lower than 2 feet? From the dam to the in-take is 180 acres.
1105. Do you know anything about the levels of Cook's River? Yes.
1106. What is the rise and fall of the water in Cook's River, spring tides? From 5 feet 8 inches to 6 feet above low water mark.
1107. Would there be any difference between the rise and fall at Shea's Creek and at the Tempe Dam? Nothing to speak of.
1108. Is it practically a level? Yes.
1109. Would the discharge at Tempe Dam practically find the tide as low as it would at the mouth of Shea's Creek? About the same. There might be a few minutes' difference.
1110. In your opinion, would the discharge at Tempe Dam, above Marrickville Flats, have as good a head behind it as one would at Shea's Creek? I think so.
1111. Therefore, in your opinion, if the alternative scheme be based on the assumption that it will find some 2 or 3 feet lower water at Shea's Creek than it would at the mouth of Marrickville Creek, the present dam being removed, it is based on a wrong contention? Quite so.
1112. If the present Tempe Dam were removed, and Cook's River were allowed to flow out unimpeded, or if there were sluice-gates which were equal to the carrying capacity of the river, would the discharge from the mouth of Marrickville Creek be pretty well as low as the discharge at Shea's Creek? Yes; I think it would.
1113. Not much difference? Not much difference.
1114. The difference in the levels of the river at the mouth of Marrickville Flats and at the mouth of Shea's Creek is accounted for by the presence of the dam, and by no other reason? That is right.
1115. How far is it from Marrickville Creek to Shea's Creek? I should think that it would be quite a mile, going round the fascine banks.
1116. You believe that that distance in an estuary, such as Cook's River would be if the dam were not there, would not account for much difference in the level? No, it would not.
1117. You are aware that Cook's River narrows as it goes up; but you do not think that that will materially alter the level? Quite so.
1118. We take it for granted that in giving these replies you are well acquainted with the surroundings of the place? I know the whole district.
1119. Do you desire to make any further statement with regard to the main Departmental scheme? The alternative scheme will not relieve the flat from flood-waters, except only partially. The main thing is the river. On the southern end of the present dam at Tempe, if there were a new opening of 300 feet, with gates 2 feet 6 inches lower than they are at present, that would relieve the flat better than the alternative scheme would. The gates are about 2 feet 2 inches above low water at the present time, and I think that they should be 3 inches below it. It takes from 12 to 16 inches head to work the present gates.
1120. How much head ought to work a gate? From 4 to 6 inches ought to work a proper gate.
1121. *Mr. Wright.*] I understand that your objection to the alternative scheme is that it has not got fall enough; and secondly, that by reason of the high waters coming into it, it would be blocked from running during high tide? Quite so.
1122. Can you tell us what is the fall of the great outlet sewer to Ben Buckley? About 4 feet per mile.
1123. Are you sure of that? I think so. It was so when I drew the plans for the late Mr. Clark, hydraulic engineer to the New South Wales Government. I was with him when he designed the sewerage for the city of Sydney. I do not think the plans were altered.
1124. What is the distance for that outlet? About 6 miles.
1125. And yet that takes sewage within 10 feet of high-water mark in Sydney? I think it is 40; it was 30. It takes all sewers above a 40-foot contour.
1126. I think Mr. Dariey said lately that the fall of the outlet sewer to Bondi was 10 inches to the mile? Then they have altered it.
1127. You are quite sure that, under no circumstances, the alternative scheme would clear the Marrickville Flats? I am sure it would be of no use to it.
1128. From the in-take to the proposed site of the dam is it not a dead level? No; it is higher along the bank of the river than at the in-take.
1129. How much lower than the in-take do you think would be the lowest part, going from the in-take to Cook's River? I do not think it is worth talking about.
1130. You say the in-take would not take away the water from the lower part of the valley? Certainly.
1131. How much lower is the lowest part of the valley than the in-take? About 2 feet.
1132. How do you propose to clear that valley; even if you lower the sills of the Cook's River Dam 2 feet 6 inches, how could you clear that valley at high tide in heavy rains? The lowering of the sills 2 feet 6 inches would lower the water 2 feet on that flat.
1133. At high tide? Not exactly, but when it is on the move again.
1134. Do you see any possibility of permanently draining that valley at all times? The only possible way is by a pumping scheme.

1135. *Chairman.*] Is there anything further you would like to say? In the main Departmental scheme there is provision for a dam on the Illawarra Road, and another dam on Wollli Creek. If that scheme were carried out, and the southern end of the present dam had an open waterway, and the water were allowed to go up the river, it would be a miniature of the present scheme.

J. P.  
Josephson,  
Esq.,  
A.M.I.C.E.

1136. *Mr. Roberts.*] Have you looked into both these schemes put before the Committee by Mr. Darley? I have. 8 July, 1896.

1137. Do you approve of them? Not in their entirety.

1138. Mr. Darley provides for lowering the sills of the Cook's River Dam at a cost of £2,000;—do you approve of that being done? Yes.

1139. And then Wollli Creek and Cook's River are to be thoroughly dredged and cleaned? I think that would have the desired effect, and is about all that need be done.

1140. Are you prepared to make any other suggestions with a view of improving the scheme? One thing I thought of suggesting was this: supposing that the Government remove the present Tempe Dam, they could take a contour line of the whole of the land on both sides of the river up to Canterbury, and see what land would be covered at high tide, consequent on the removal of the dam, and then that land could be reclaimed up to a certain mark—say, 6 feet—and be subdivided and sold.

THURSDAY, 9 JULY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.  
The Hon. CHARLES JAMES ROBERTS, C.M.G.  
The Hon. WILLIAM JOSEPH TRICKETT.  
The Hon. DANIEL O'CONNOR.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEF, Esq.  
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GEORGE BLACK, Esq.  
FRANCIS AUGUSTUS WRIGHT, Esq.

FRANK FARNELL, Esq.

The Committee further considered the proposed Improvement of Cook's River.

John Horatio Clayton, Esq., Mayor of Rockdale, sworn, and examined:—

1141. *Mr. Trickett.*] Will you inform the Committee in what way your borough is affected by the proposal now before us? So far as our borough is concerned, the part of Cook's River which interests us is the part above the Tempe Dam, commencing at the dam, extending up to Wollli Creek, and then going along Wollli Creek. Those are the parts which skirt our boundary.

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1142. Will you tell us how your borough is affected by the present state of affairs? There are gentlemen here who have known the river longer than I have. I have known it ten years, frequently passing over it. It is a thorough nuisance. Passing over the railway dam, as we do daily, you can see an accumulation of green stuff, the smell from which is very bad; worse in summer time, of course. You see it under the best of circumstances now. In summer time the river is lower, and I have seen the foreshores covered with this green accumulation. Wollli Creek is very bad indeed. It is a constant cause of complaint. The river has been so pretty well ever since I have been there, and it is growing worse from year to year.

1143. Does the drainage of any part of the Rockdale Municipality go into any part of Wollli Creek and Cook's River? Yes; the drainage of a large portion of our municipality goes into Wollli Creek and Cook's River.

1144. So that, in a measure, you are contributors to the nuisance yourselves? Of course we are, in a measure, if there is any nuisance, the same as the city of Sydney contributes to the harbour nuisance.

1145. Is there any scheme of drainage provided for Rockdale under the Metropolitan and Suburban Water and Sewerage Act? I am not aware whether it is provided for, but I should say that it is. The western outfall sewer goes to the sewage farm through our district—crosses Wollli Creek, and makes its way to the sewage farm. I take it that we shall be connected with that by-and-bye. It may be some years hence. No start has been made yet.

1146. But I suppose that the sewage that at present goes into Wollli Creek and Cook's River from Rockdale does so inevitably at the present time? Yes.

1147. Then you are interested in this project? Solely with regard to the improvement of Cook's River; not in any way as regards the drainage of Marrickville.

1148. That does not affect you and your aldermen? Not in any way. We look upon it as merely local.

1149. Has this subject had consideration at the hands of your council? It has.

1150. Can you inform the Committee whether you agree with that part of the Government proposal which affects Rockdale? Yes, so far as the council are concerned; I may say they have considered this matter as being a nuisance to the public. They have seen the river dammed, and they could not perceive that it was other than a good sewage-pit. If they desired a sewage-pit they could not do better than dam the river as it is dammed. That is the grievance, but some of us have stood off from the consideration of any scheme, because we thought that we were not competent to deal with one. Schemes have been suggested, but we thought that it was a matter for skilled men to deal with.

1151. Do you and your council think that the mode suggested, of cleaning out the river, and also lowering the sills of the dam at Cook's River will help to improve things? I do, personally, and I think that the majority of my council also do. If future interests may be considered, why not make the river, as far as possible, navigable, looking to what may take place in the future, such as the use of the river by coal barges, or anything of that kind.

1152. But if that were provided for would that not let the salt water into Wollli Creek? I do not know what the effect of that would be. It is a matter I should not like to enter into.

1153. But to make the river navigable you would have to let in the salt water? Yes.

1154. And we have had evidence that to do that would cause very great damage to the low-lying lands higher up the river—do you think it would be desirable that, besides dredging and cleaning out the river, its banks should be made permanently good by fasciæ work, or anything of that kind;—is that necessary? I think it would be.

1155.

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1155. Can you tell us what frontage your borough has to Wollie Creek and Cook's River? I cannot give you any idea as to that. It may extend a mile and a half or a couple of miles, or perhaps more.
1156. You know the railway bridge near the junction of Wollie Creek and Cook's River? Yes.
1157. Have you considered whether that does or does not interfere with the free scour of the river? I should say it does, and that it adds to the nuisance.
1158. Owing to the embankment being put in part of the river channel? Yes.
1159. Is there any rapid flow of the river after heavy rain? I have not noticed particularly. It gets low very quickly, and it rises very quickly. I have seen it in flood about Marrickville, and it apparently goes down in the course of a day or two, but I have not particularly noticed the flow.
1160. The state of Wollie Creek is attributed by the Department in a great measure to the tannery that exists on Wollie Creek;—do you think that has much to do with it? No; I do not. It may have assisted at one time. The pollution has been greatly helped by reeds growing up in the creek not allowing the free flow that otherwise there would naturally be. So far as the tannery is concerned, I may say it is within our municipality, and I find the manager very willing to assist the local governing body by clarifying the water before it gets into the creek. If there is any pollution it is for the Department to deal with it. The creek is outside our boundary, and we have no power to stop or prevent its pollution by prosecuting people. It is for the Department itself to prevent the pollution. Our boundary more or less goes up to the edge of Wollie Creek.
1161. Therefore, Wollie Creek is not actually within your boundary? No; Wollie Creek is a tributary of Cook's River.
1162. And you say that at the tannery the effluent is treated, in a measure, so as to prevent pollution of the creek? Yes; in every possible way. Whenever I have heard a complaint I have sent to the manager, and he has certainly done all a man could do.
1163. I suppose that the water now gets away tardily from Cook's River through the flood-gates in the Cook's River Dam? Yes.
1164. It is proposed by the Department to lower the sills of those flood-gates about 2 feet;—do you think that will facilitate the outflow? I should say it would; but whether that would be sufficient or not I am not competent to judge. I have always taken the view that we are not competent to deal with the matter. Every second alderman appeared to me to have a remedy, but I preferred to leave the matter to experienced hands.
1165. I understand, then, that the object which you gentlemen have in coming here to-day is chiefly to accentuate the great nuisance that exists at this part of the river? Yes.
1166. You have not come here to suggest remedies, but only to endorse all that has been said as to the urgent necessity for something to be done? Yes.
1167. But you appear to agree that one great necessity is that the river should be cleared of these weeds and other things? Yes.
1168. And that there should be some dredging to facilitate the ready flow of the river? Yes.
1169. You think that would be a very strong factor in keeping it clear? Yes.
1170. Comparing those parts of the river where the weeds are much grown with those parts where they are not so bad, is the state of the river worse in those parts which are very reedy? I cannot say. They all seem to me to be much alike. Not only do we come here with regard to the nuisance—without suggesting a remedy—but we also wish to say that we think that this is not a matter in connection with which the betterment principle can be applied. The Cook's River Dam was put there by the Government, and of course we had no power to remove it. The Government by putting the dam there have caused a nuisance, and by neglecting to dredge the river, and treat it as they have treated other rivers, deterioration has been caused. Now, after a lapse of some years, the Government come along and say they will dredge the river, and do other necessary works. Under the circumstances, we cannot see how the principle of betterment can be applied. We say that adjacent properties have been deteriorated in value, and that if possible the principle of compensation for deterioration should be applied.
1171. I suppose you also urge that you are not the greatest offenders in regard to the pollution of this stream? We are not offenders. We try to do what we can. A great deal of our drainage is treated by the householders themselves, who are very glad to utilise it as far as they can.
1172. What system have you in regard to closets? The pan system.
1173. Where is the night-soil deposited? On the sewage farm by the contractor.
1174. It is taken right away to the sewage farm? Yes.
1175. Therefore, it does not contribute to the nuisance? No.
1176. So all that runs into the river is house-slops? Yes; and not a great deal of that from Rockdale. Drainage also comes into it from Hurstville, and from a very large area besides Rockdale.
1177. I suppose that if a proper system of sewerage were adopted, connecting Rockdale with the sewage farm, the Municipality of Rockdale would willingly fall in with the Government scheme;—it would be glad to have a system of water-carriage, if it could get it? Very glad.
1178. Are you prepared to offer any opinion as to the scheme in any other respects? No; except that I should like to see a good scheme, making provision for future requirements, so as to rid us of all nuisance. We can give data with regard to the nuisance, and then I think it is for skilled men to provide an adequate scheme for remedying it.
1179. You are able, I suppose, to state that the nuisance has gone on increasing as population has increased? Yes.
1180. Is Wollie Creek the outlet for the storm waters of your municipality? For a large portion it is.
1181. Where do the storm waters from the other portion go? They make their way towards Cook's River—below the dam and Botany Bay.
1182. Below the dam—that is, to the south-east? Yes.
1183. Is there anything else you would like to say? No. There are some very old residents here who recollect the river in early days—Alderman Judd, who was once member for West Botany, and others, who can, perhaps, add a little with regard to their own experience of thirty or forty years.
1184. They will be able to state that the nuisance has been an increasing one? Yes.
1185. *Mr. Clarke.*] Do you think the present scheme would be of any benefit to Rockdale in removing the nuisance that at present exists? I think it would be, judging from the opinion expressed by such an officer as Mr. Darley. I think it would relieve us of the nuisance.

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1186. As regards the alternative scheme, what do you think of that? That does not interest us at all—it is merely local.

1187. You think that the railway embankment has prevented the usual flow of the water from Wollie Creek;—do you think that has been the cause of the waters not getting away so easily as they should have done? I think it has added to it.

1188. Wollie Creek formerly discharged into Cook's River at the end of the southern railway embankment, did it not? I do not recollect that. That is going back a little before my time.

1189. It has been stated here in evidence by some of the witnesses that the railway embankment, not having an opening on the southern side, where Wollie Creek formerly discharged into Cook's River, has been the means of preventing the water from getting away as readily as it formerly did? I should say that that is the case.

1190. It has also been stated that the reeds and other obstructions growing in Wollie Creek have been caused chiefly by the railway embankment? I cannot say whether it is so or not.

1191. You think that if this scheme were carried out it would be a benefit, not only to other municipalities, but also to the Municipality of Rockdale? Yes; I do.

1192. Do you think that it should be carried out entirely at the public expense? I do, Cook's River being a national waterway.

1193. And you think that no municipality in the neighbourhood should contribute towards its cost? I do.

1194. *Mr. Wright.*] I suppose you look upon this matter principally from a sanitary standpoint? I look upon it from a sanitary standpoint, not only as touching our own district, but also as touching the metropolis, because it is a growing danger. Year by year we become more impressed with the danger.

1195. The insanitary condition of a river you look upon as a danger, not only to that immediate neighbourhood, but also to the surrounding country? I do.

1196. What arrangements have you for sewage in your municipality? So far as the treatment of night-soil is concerned, we have the contract pan system. The contractor removes the night-soil to the sewage farm. With regard to household slops, most of the people utilise them about their own places, others may, it is possible, drain into the street; but the population of Rockdale is very scattered, and that would be really next to nothing. The principal drainage into the creek are the waters that fall from the heavens.

1197. But the waters that fall from the heavens are not polluted? I know that. But I do not altogether admit pollution, or, rather, I admit it in this way: Cook's River is dammed, and if you wanted to construct a sewage pit, you could not do better than dam up the river, and let it receive all the drainage from the adjoining areas.

1198. That makes it a stagnant pool? Yes; a stagnant pool.

1199. Is your night-soil buried within the bounds of your own municipality, or carried outside it? It is buried in the municipality. Unfortunately we have the sewage farm in our area; it is the outfall for the western suburbs.

1200. There is nothing insanitary about that, is there? We urge that at times an offence has arisen, but the sewage authorities say that there is no offence, that they treat it without offence.

1201. They profess to deodorise the stuff at once? No; they separate the solids from the liquid, and put the solid into the sand.

1202. Where do your slops drain to? Some of the slops are utilised by a number of the householders on their premises, other house-slops may drain into the street, but in such small quantities that you would never see a running gutter in our municipality, or, at any rate, very seldom. The household drainage dries up, and I daresay that sometimes the rain-water may carry some of it into Cook's River.

1203. Does it gravitate naturally into Cook's River? Yes, eventually. We are on a ridge, and the drainage of one side goes towards Wollie Creek, and that of the other side towards Botany Bay.

1204. So a portion of your borough must necessarily drain into Cook's River through Wollie Creek? Yes; but only a little.

1205. Would not the alternative scheme interest you in this respect—if any portion of the surrounding district were insanitary, would you not suffer from it? It touches us in that way.

1206. So the insanitary condition of that district would affect you more or less? It would if it were insanitary.

1207. Do you not admit that both Cook's River and Wollie Creek are insanitary? Yes; but where you saw the flood the other day, if you saw the place in the summer-time you would see that it was a green spot sometimes. Those poor people have been allowed to buy land there in dry weather, and afterwards have found out to their cost that the property is flooded every now and again. The legislature has allowed the law to be such that people can come along and buy up land in such places.

1208. Have you ever considered the Departmental proposal in reference to the present dam? No.

1209. One proposal is to lower the sills of the present dam 2 feet, that is a little below low-water mark, and the Department declare that if that is done and the flood-gates are occasionally opened, Cook's River will be scoured out, and they propose to dredge it above the dam—do you think that that would fairly abate the present nuisance? I think, from a common-sense point of view, it would help.

1210. Do you think the purification of the stream would be assisted by occasional flooding by salt water also? I think so.

1211. *Mr. Lee.*] You do not desire to offer any opinion as to the scheme proposed by the Government for the drainage of Marrickville? No, I do not.

1212. You wish to impress on the Committee the fact that no matter what may be done for the relief of Marrickville there is a necessity to do something for the relief of Cook's River? I do.

1213. That is your object? Yes; and I should like to see something done for Marrickville as well.

1214. But you offer no opinion as to how that should be done? No.

1215. If the alternative scheme for draining Marrickville were adopted, in your opinion that would give no relief to Rockdale and the adjoining municipalities abutting on Cook's River? I do not think that as a matter of drainage it would assist us at all.

1216. Is it not a fact that during the last twenty or twenty-five years, since the population has increased so largely in those suburbs, the pollution of Cook's River has been largely intensified? My knowledge extends only over ten years back, but I should, of course, say that increased population has no doubt added to the nuisance.

1217. I presume it is clear that population must still further increase very fast there? It is increasing very quickly.

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1218. There is much room for it to settle there? Yes.
1219. And the inference is, that in the course of a few years the pollution of Cook's River would be very much greater than it is at the present time? Yes.
1220. Do you hold that opinion? I do.
1221. And, without expressing an opinion as to what should be done for the Marrickville people, you, on behalf of your people, have no doubt as to what should be done for Cook's River—that is, that something should be done to enable the water to have an uninterrupted flow? Yes.
1222. Without admitting the full flow of salt water at high tide? I think so.
1223. *Mr. Fegan.*] You say you are conversant with the alternative scheme? Yes.
1224. I suppose you know that in connection with that scheme it is proposed to dredge Cook's River? Yes.
1225. Do you think that if the river is properly dredged it will give you all you require at Rockdale? Yes; as far as we are concerned we have only troubled ourselves about the river, leaving Marrickville to attend to its own local requirements.
1226. If the river is properly dredged from point to point it will give you all you want? Yes; I think so.
1227. In his alternative scheme Mr. Darley proposes to dredge the river, to lower the sills at the Cook's River Dam, at a cost of £2,000—the alternative scheme is really a local one so far as the Marrickville tunnel is concerned, but the dredging of the river, and the lowering of the sills, of course, will affect not only Marrickville, but also your municipality? Yes.
1228. Have you thought out any other scheme which would be preferable to make your municipality healthier than this scheme would? No; I have not. On the contrary, I have avoided thinking out a scheme, because I heard so many expressions of opinion with regard to schemes, and some of them were so foolish, that I thought it best for aldermen to leave schemes alone, and to leave the matter to the engineers. My idea was that whatever Mr. Darley or any other good engineer proposed, would be worthy of very great consideration.
1229. You think that a man holding the high position of Mr. Darley is more competent to think out a scheme than a person who knows nothing about engineering? I think so.
1230. And under these circumstances you are willing to be led by the opinion of Mr. Darley in this matter? Yes; we supplying him with all the necessary data. That is all we can give him. I do not know that any one of us is capable of propounding a scheme to meet the requirements in such a case as this.
1231. In connection with the alternative scheme, Mr. Darley also proposes a dam across Marrickville Valley at a cost of £2,000—of course that is really local, and does not touch you in any way? No; it does not.
1232. Therefore, the chief point of your evidence is that you believe that the river should be thoroughly dredged? Yes.
1233. *Mr. Hassall.*] In what way would this scheme affect your municipality? The scheme would relieve the river from the almost intolerable nuisance now existing, and which is increasing—at least we take it that it will. There is the nuisance, and we leave it to the officers to devise a scheme for its removal.
1234. The alternative scheme proposed by Mr. Darley for draining Marrickville Flats would not be of any benefit to your municipality? No, except, as Mr. Wright put it, from a sanitary point of view. There is no doubt that the Marrickville Flats are insanitary, and add to the pollution of the river. That flooded area requires to be drained, but we are not capable of saying whether the system of drainage proposed for it is a competent one.
1235. Where is the outfall for your drainage? Part of the watershed, being one side of a ridge, drains into Wolli Creek, and another part drains into Cook's River above the dam, and another part, on the other side of the ridge, makes towards Botany Bay and the lower part of Cook's River below the dam.
1236. How long has your municipality been established? Since 1871, under the name of West Botany. We are one of the oldest municipalities in the Colony.
1237. Was the dam across Cook's River built before your municipality was formed? A long time before, according to report.
1238. It is a very old road, is it not? A very old road, and outside the boundaries of our municipality, of course.
1239. That dam was built a considerable time, at any rate, before your municipality was established? Yes.
1240. Therefore, the municipality has grown up with the existing conditions? Yes.
1241. And whatever obstruction may have occurred through the building of the dam has not occurred merely since your municipality was formed? No; it has not occurred merely since then. Of course, the railway was built later on, and caused a second damming of the river, and increased the nuisance.
1242. Then your opinion, I presume, from the evidence given by you, is that that scheme which would be beneficial to the largest number of residents in that locality, including Rockdale and Marrickville, would be one providing for the deepening of the river, and for the outlet of flood-waters in a more comprehensive manner than has been adopted up to the present time? Yes.
1243. *Mr. Roberts.*] Do your council employ a civil engineer? No; we employ an overseer.
1244. Has he ever furnished the council with any report on the state of Wolli Creek, or offered any suggestions as to its improvement? Yes, he has. Our inspector of nuisances has done that from time to time.
1245. What was the nature of the report? We have written to the Government asking them to have those reeds cleared away—asking that the creek may be cleared out—but unfortunately the Government could not undertake the work, and we had no power to touch Wolli Creek. It is outside our boundary. We come up to the shore.
1246. And that was the recommendation of your inspector of nuisances? Yes; we have applied time after time. We called attention to the state of the river and Wolli Creek. We have waited on the Government, but without result.
1247. Do you regard it as a menace to the public health; is it as bad as that? I do, not only locally but to the whole metropolis; it is growing year by year.
1248. Can you trace any cases of sickness to the state of the creek? We cannot do that. We can only say that it is probably a factor with regard to disease. We cannot trace any actual disease to it. It is in such a state that if it were round our own homes we could not tolerate it.
1249. Does the creek ever overflow? I think it has done so in flood-times, but of course the water generally in it does not get away. I have never been up the creek, but, in crossing over the dam, I have seen the river very high at times.
- 1250.

1250. Is there much population around Wollli Creek? No; but in Rockdale itself the population has increased wonderfully since the railway was made. Our last return showed that we had something like 6,000 people in Rockdale. Our area is about 8 square miles. Taking out about a square mile for the sewage farm leaves about 7 square miles of territory on which there is a population of 6,000 people.

1251. The borough contains a scattered population? Yes.

1252. Do you think that if the rushes were removed from Wollli Creek, and the place were thoroughly dredged and cleaned out a great improvement would take place? I do.

1253. Can you suggest anything else that ought to be done? I cannot. I know the nuisance is there. I should like to see it got rid of, but I do not know how to suggest any remedy.

1254. So far as you are able to judge, you regard the dredging and thorough cleansing of Wollli Creek and Cook's River as a desirable work? Yes, very desirable. As regards the Cook's River Dam, I should like to point out that although that dam has been there for so many years, of course, it has not been there with our consent. We have agitated against it, we have asked for its removal, and for the erection of a bridge, but the Government have not complied with our request. We saw the nuisance arising from it, and we agitated against it. We have not lain quietly by. We could not, of course, forcibly remove it, and it has been kept there. As regards the sewerage rate, I would point out that in paying our contractor for the removal of the pans, we now pay what is equivalent to a sewerage rate. We should not pay more for a proper system of sewerage. As regards having dams higher up the river, I should like to say, in justice to those municipalities above us, that if our argument is good in regard to the Tempe Dam, a nuisance must in course of time be created by the erection of dams higher up. We desire to act for the benefit of the public generally and not selfishly, merely for our own benefit, and that a good job should be made of whatever is done.

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William George Judd, Esq., Alderman of the Borough of Rockdale, sworn and examined:—

1255. *Mr. Clarke.*] Have you been long a resident in the neighbourhood of Rockdale? Yes; for nearly forty years.

W. G. Judd,  
Esq.

1256. Do you wish to make a statement to the Committee as to the necessity or otherwise of the works proposed to be carried out in order to abate the existing nuisance? There is no doubt that Cook's River has for many years been an intolerable nuisance. As gentlemen sitting in the room know, the first part of the river, that is, from Botany Bay up to the dam, was so intolerable that people on the southern slopes of the city felt the effects of it until the Government carried out those reclamation works. Now the same thing is occurring on Cook's River between the dam and Canterbury. It is becoming just the same as those flats were between the dam and Botany Bay. An offensive greasy matter gets on the surface of the water, particularly in the summer-time, and if we have not had much rain, the wind from the north-east carries the smell, which is intolerable, over Rockdale. No doubt that arises from sewage matter. The dam seems to make a nice little cesspool between the railway bridge and the dam. If you are passing over the river in a train on a summer's evening, and the wind is coming from the north-east, you get a nice smell. I have seen ladies and gentlemen rush to put the windows down, when they reached Tempe station, in order to shut out the smell.

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1257. You believe that something is absolutely necessary to be done to prevent this nuisance? Yes.

1258. Have you seen the present plans? Only a few minutes ago. I have not examined them, but I have some idea of them from reading in the newspapers what Mr. Darley proposes.

1259. Can you express an opinion on the alternative scheme, or on the main departmental scheme? The alternative scheme will not do any good for the district of St. George. I have known that place for nearly forty years, and I have seen the tide go up the Marrickville Valley higher than where the tunnel is proposed to be made. I have caught bream weighing 1½ lb. each at the site of the proposed intake of the alternative scheme. The alternative scheme will not affect the state of Cook's River from a sanitary point of view. It will only deal with flood-water that comes down from the higher land of Newtown, St. Peters, and Petersham.

1260. From what you see of the plans now you think that the main Departmental scheme would be of the greatest benefit to the various municipalities and the public at large? Yes, it would.

1261. Can you suggest anything that should be done? I do not think that, unless something were done to Wollli Creek, any work that is carried out would be of great benefit to the river. I have watched the river in floodtime and in dry seasons. The water from Wollli Creek comes down with a great rush, and since the railway crossing has been made the waters of Wollli Creek seem to strike in its original channel against the earthworks of the railway. That sends the water as a kind of whirlpool up the river again, and consequently blocks, to a great extent, the water from Marrickville Flats, and I think that whatever is done will not be successful unless something is done to Wollli Creek in the way of dredging it and making up some of the lower banks. Wollli Creek was at one time a beautiful clear stream, but to-day you can walk over parts of it.

1262. Can you say when the present dam at Tempe was built? I cannot say how long ago; it was erected before my time. Of course, there have been alterations to it since.

1263. The original dam was small compared with what the dam is now? It has been raised a good deal. I can remember that.

1264. Several witnesses say that it was originally built about fifty-five years ago? I cannot say.

1265. The dam having been originally built, I presume, by the Government of the day, and the nuisance having increased since through the dam being erected there, and thus preventing the flood-waters from getting away, you think it would be the duty of the Government to remedy the defects in the system at the public expense? I certainly think so. If you were to put a dam across George's River at Como, at the end of ten years you would have pretty much the same sort of thing as we have at Cook's River. The foetid water seems to accumulate more near the convent, where the still water is, than at places higher up the river.

1266. Do you consider that the railway embankment, by diverting the waters of Wollli Creek from their natural outlet, has increased the nuisance? I would not say that it has increased the nuisance, but it has interfered with the free flow of the water. The flow of water from Wollli Creek is right against the buttress of the railway bridge, and since the railway has been built the road has been raised and extended to that new bridge at the Tempe Station put in by the Government, and the waters that used to go that way

strike

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strike that bridge and the higher part of the road, and then the Wollie Creek waters curl round and block the water of the river. It has naturally made a whirlpool there.

1267. In other words, before that railway embankment was made, did the water get away more freely than it does at the present time? It did from the low-lying lands on the Wollie Creek side and Miss Campbell's property.

1268. *Mr. Lee.*] You have been connected with the Municipal Council of Rockdale for a number of years? Yes.

1269. Do you remember the council making any previous representation to the Government respecting this matter? Repeatedly. St. Peter's Council and Rockdale Council have both been making representations to the Government for years.

1270. It has been a cause of complaint then for many years? Yes.

1271. It is not a matter that has cropped up since this reference was made to the Committee? No.

1272. So far as your council are concerned they have always been placing it before the Government? Yes.

1273. You are acquainted with the scheme originally referred to this Committee? I have not looked through it.

1274. Have you ever looked at the estimate of it? No; I have not.

1275. *Mr. Darley* proposes to remove the Cook's River Dam, to alter the level of the road, to erect a new bridge 300 feet long and 45 feet wide, to put in training walls and fascine banks on both sides as shown on the plan, to have a dam and sluice-gates across Marrickville Flats, a dam and sluice-gates at Cook's River at Undercliffe Bridge, and a dam and sluice-gates across Wollie Creek, to dredge the full width of the channel 5 feet deep to Undercliffe Bridge, and to clean out Wollie Creek;—if that work were carried out, would that give the relief you think is necessary? I think it would.

1276. You see that the object of that fascine work is to prevent the influx of salt water on to that land and to create a scour in the channel? Yes.

1277. The object of the dam across Marrickville Flats is to prevent the inflow of flood and tidal waters? There is no doubt that would be a great improvement.

1278. I will now direct your attention to the alternative scheme. It is proposed, under that scheme, to tunnel and drain to Shea's Creek, to have flood-gates and a dam across Marrickville Valley, to dredge Cook's River and Wollie Creek, and to lower the sills at the Cook's River Dam. You see, even under that proposal there is work to be done at Cook's River—to give an easier outlet for the foul water there;—do you think that would be effective? I would not care to offer an opinion about that open channel and tunnel.

1279. You see, there are two things sought to be done—one is to give relief to Marrickville, which is flooded by surface water, and the other is to give relief to Cook's River;—in your opinion, which of those schemes would be the more effective? In my opinion the original proposal would. It only seems reasonable that the river should have a proper scour.

1280. You have seen the Marrickville Valley in wet weather? Yes.

1281. Things are very bad there? Frightful.

1282. I believe it also drains the watershed of adjoining municipalities? I suppose that four or five municipalities drain into it.

1283. You admit that there is a necessity for something to be done there? There can be no doubt as to the necessity.

1284. Without expressing an emphatic opinion as to the proposal, are you prepared to admit that if the proposal under the original scheme will give relief to Marrickville, you are of opinion that it will also give the relief sought in regard to Cook's River? It will assist in relieving flood waters, but whether it would be a success, I would not like to give an opinion.

1285. But if it would be effective in draining the Marrickville Valley, in your opinion would it be sufficient to give effect to what you require to be done in Cook's River? I consider that if it were constructed, and it relieved the flood-waters, it must of necessity relieve Cook's River—that is, if it were effective.

1286. The output of waters from Marrickville Valley will assist in keeping up the scour of Cook's River? Yes.

1287. *Mr. Wright.*] If a system of underground drains were carried out in your and the adjacent municipalities, would that largely effect your object—I mean, if the Water and Sewerage Board carried out the ordinary sewerage there? Well, in the Municipality of Rockdale I do not think it would cause any alteration if we had underground sewerage there. I do not think it would make any difference to Cook's River. All the slopes to Wollie Creek and Cook's River are of a sandy, porous nature, and I do not think that within a mile of Cook's River or Wollie Creek you could see any household soapsuds or water running from any of the houses. I have not seen it myself, and I live amongst them. Most of the people, on account of the land there being so porous, dig a pit, and fill it up with rubble, 5 or 6 yards square, and cover it with bushes, and use it for years for refuse water. I have one that has been in operation for seven years.

1288. But if St. Peters, Marrickville, and Rockdale, and other municipalities were sewered, would that not, to a large extent, get rid of the nuisance? It would at St. Peters and Marrickville and the southern slopes of Newtown, because they all drain into the Marrickville Valley, but Arneliffe Ward, which is the portion of Rockdale that abuts on Cook's River and Wollie Creek, is so sparsely populated, and the ground is so friable, that you cannot see any drainage.

1289. In the event of this work being carried out, do you think it would be fair for the Government to ask the local municipalities to pay for a portion of that work? No; I do not think so. The Government dammed the river up, and then the railway people made it worse.

1290. You think that, as they have destroyed the natural flow of water, they ought to make it good again? Yes; let the river scour itself.

1291. If the sills of the dam are lowered, and the river is dredged as the Government propose, do you think that in a few years, with the present population and the large increase of population that will naturally take place, it is only a question of a very short time when the river will be as foul as ever? No. Marrickville is now becoming connected with a sewer, the outfall into the sewage farm, and the population there will not affect the river in future years as they do at present.

1292. According to your own statement, the river below the dam was very foul before the Shea's Creek work was undertaken? Yes.

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1293. Was that caused by the accumulation, principally, of sewage matter? Yes.
1294. Was that brought down there by gravitation, or lodged there by the tide? It was brought there during flood-times and spring tides, and it hung about the mangroves and other weeds, and lay festering there in the sun, and gave off an awful stench.
1295. There you had the uninterrupted natural scour? Yes.
1296. And yet it did not abolish the nuisance? The work that has been done there has abolished the whole of the nuisance.
1297. Yes, by clearing it out; but if that state of affairs existed below the dam, would not the same state of affairs exist above the dam, even if the river were cleared out? Not if the river got a scour. I will tell you why: the river is confined to a channel, but below the dam it was not confined to a channel, but spread over hundreds of acres of land, and was only knee-deep under water.
1298. You think that an occasional flooding of the river will assist to clear it out? Yes; if there is a proper get-away.
1299. *Mr. Hassall.*] The erection of fascine banks at Tempe and on Bonnie Doon property has made a well-defined channel, and been a great improvement there? Yes; a splendid improvement.
1300. And so a great deal of what was complained of before that work was undertaken has now been removed? Yes; I think the whole of it.
1301. You admit that Rockdale has practically been established since that dam was erected across Cook's River? Yes.
1302. Well, the Government are not to be blamed for erecting that dam, are they? They are to be blamed for blocking the river, and then, of later years, for making the railway crossing in the way they did.
1303. But they did not erect the dam across the river or the railway for the benefit of any private individual, did they? The erection of the dam was before my time.
1304. But have not those works been carried out for the benefit of the general public? There is no doubt that the erection of the dam was for the benefit of the travelling public, who in those days went that way to Wollongong and other places in the South Coast district.
1305. It was the means of their going backwards and forwards? It was a Government highway.
1306. Practically, Rockdale has grown up since that dam was constructed, and the people knew what they were facing? Yes.
1307. With regard to the original scheme of Mr. Darley, would the expenditure of money in the direction indicated in Mr. Darley's scheme, the particulars of which have been given to you during this examination, have the effect of improving private property at the expense of the State? There are some low-lying properties abutting on the river which might be improved, but I will state my own case. What improvement would it be to me a mile or a mile and a quarter away. It would be no improvement to me at all, except the getting rid of the intolerable smell.
1308. Your land is not liable to inundation? No; I think that if low-lying land is made marketable that is a different thing.
1309. But in reply to a question put by Mr. Wright, you admitted that the river in its present condition was offensive? Yes.
1310. What is that offensiveness caused by; is it not caused by settlement in the locality, and drainage coming into this natural watercourse? Yes.
1311. Therefore, are not the people who cause it more to blame than the Government? Yes, they are to some extent; but what are they to do where they have no sewerage scheme.
1312. Do you think that the Municipality of Rockdale would be willing to bear a share of the expense of carrying out this work to benefit their own particular municipality? No; they will not be any party to that.
1313. Do you think the Government ought to go to the expense of putting this river into shape after it has been polluted by the municipalities which are on its banks? We cannot do anything. It is a natural waterway—it is beyond our control.
1314. Will you not admit that the residents in that locality have been, to a certain extent, responsible for the pollution of this natural water-course? Yes; for several miles from it. All the southern slopes of Newtown, Petersham, St. Peters, and part of Macdonaldtown—all for miles around. It is the natural outfall. The drainage could not very well go anywhere else.
1315. Well, if this is to be looked upon as a work calculated to improve the sanitary conditions of the various municipalities affected, do you not think that it would be a fair thing for the Government to make a charge on those municipalities to cover the interest on the cost of construction? No, I do not; because I think that if we had a proper sewerage system, which we are prepared to pay a sewerage rate for, we should not contribute any nuisance to that.
1316. But would not this have the same effect? No. It would never have the same effect as an underground sewerage system would.
1317. If this work were carried out, would there be any necessity for an underground sewerage system to be carried out also? There would be in time, as the population increased. At present, as the Mayor has said, we have a contractor who takes all the night-soil away to the sewage farm, where it is dug in.
1318. Practically, then, the carrying out of this proposal will mean the expenditure of £30,000 or £40,000 for the purpose of tiding over a period of a few years until a better scheme is brought into operation? This will get rid of a serious injury to the inhabitants within some miles of Cook's River, which it will always be if it is not remedied as proposed. But an underground sewerage scheme must come along sooner or later.
1319. To embrace the municipalities of Rockdale, Marrickville, and certain other surrounding municipalities? They must have it later on, and they will have to pay a rate for it.
1320. But you would not expect them to pay any rate for this, which would practically have the same effect for a certain time? It will not have the same effect, because we could not use the river for an open sewer.
1321. Then you object to pay for it because it would not benefit you? Yes.
1322. Then why would you advocate that the work should be carried out at all? I am not a medical man; but there is no doubt that serious results are traceable to the condition of the river. I think you could get a medical man in the district to pretty well locate it.

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1323. That is caused by local pollution, is it not? Yes.
1324. And if it is caused by local pollution, do you not think that those responsible for that pollution have some right to pay for the removal of what is objectionable to the bulk of the inhabitants? No, I think not, for the barrier has been placed there by other people before they came there.
1325. It is admitted in evidence that the barrier was there before your municipality was formed? Yes.
1326. Your municipality has grown up in spite of that barrier being there? Yes.
1327. Therefore, the Government cannot be blamed for having put the barrier there to the detriment of a large population which settled in that particular neighbourhood after the barrier was erected? Yes.
- Blackwattle Swamp was in the same condition, and the Government had to come to the rescue to save the lives of people, as they will have to do here, through Parliament.
1328. Instead of the Government going to the great expense of reclaiming land and erecting fascine banks, if they were willing to carry out such works as the lowering of the sills of the present dam and enlarging the opening through which the water could make its escape, do you think that that would carry out, practically, all that is necessary at the present time? I think that would be a great improvement.
1329. Making the natural flow of the river available for keeping it clear as far as possible? I think it would.
1330. Do you think the Government would be justified in going to an expenditure of between £30,000 and £40,000 in carrying out extensive works which would have the effect of improving private property, the Government getting nothing back in return? Well, the private property which it would improve, or at any rate give it a marketable value, would be very small.
1331. Then who would benefit by it? The people at a distance of a mile or 2 miles away from the river, because the air would not be polluted with vapours arising from the river.
1332. Do you not think that people who will be benefited through the work being carried out will have a right to pay some portion of the cost? No more than the residents of Rockdale could call on the people of the city and other suburbs for assistance because they empty their night-soil into part of the Municipality of Rockdale. We cannot claim anything from them, and we have to put up with Cook's River.
1333. *Mr. Roberts.*] I think you represented this district in the Legislative Assembly? Yes.
1334. How long ago is that? Eight or nine years.
1335. Did the nuisance exist then at Wolli Creek and Cook's River? There was a certain amount of nuisance there.
1336. Was your attention directed to it as member for the electorate? Yes.
1337. Was any money granted by the Government for the improvement of Wolli Creek or Cook's River upon your representations? Not that portion, but between Botany Bay and the present dam.
1338. Not for the portion under consideration? No. *Mr. Lyne*, who was then Minister for Public Works, said that eventually Cook's River would have to be dealt with, as it was no use carrying out those reclamations unless Cook's River and Wolli Creek were attended to, as the stuff coming from there would filtrate under and fill up where they put in the fascine banks.
1339. Can you recollect what the complaint was at the time you approached the Government on the subject,—was it of the same character as now, namely, the pollution of Cook's River and its tributaries? Yes.
1340. How long has Wolli Creek been in a polluted state? Well, it has been bad for the last five or six years.
1341. And no Government money has been spent upon it with the object of removing the nuisance? I am not sure whether some money was not spent in cutting some reeds out of the bed of the creek.
1342. Have all the rushes absolutely been taken out, and has the creek been thoroughly cleansed? No.
1343. Do you think that if that were done the nuisance would cease to exist, at any rate for some years? Only cutting the rushes out would not stop it now, because Wolli Creek has got into such a state that only here and there are there pot-holes where the water lies, and then there are dry parts. In flood-time so much silt and other stuff is brought down that the creek is almost silted up in places.
1344. Could it not be dredged? One of those grab-shell dredges could do that very easily.
1345. Is there a tannery upon Wolli Creek? Yes.
1346. Is that regarded as a source of nuisance? My opinion is that tanneries must be a source of nuisance, though they try their very best to clarify the water before it empties into the creek. I think it is difficult to work a tannery without creating some nuisance on the watercourse.
1347. What is the great complaint you have at Wolli Creek and Cook's River? Well, at Wolli Creek it is the growing up of the flags and rushes impeding the water, and when the heavy rain comes it forms a block and floods a lot of the land along the banks of the creek, because there is no get-away for the water.
1348. If the creek were thoroughly cleansed, you think that would remedy it, at any rate for a considerable time? Yes.
1349. *Mr. O'Connor.*] You are a very old resident in that district? Yes; nearly forty years.
1350. As regards a question put by *Mr. Hassall* in regard to the barrier that is in existence, it was there long before the municipalities were formed? Yes.
1351. Yours is a very old municipality? One of the oldest.
1352. You pay your rates and taxes the same as anybody else? Yes.
1353. You have looked into *Mr. Darley's* scheme, and in your judgment it is a fair proposal? From what I have seen of the scheme this afternoon, and this is the first time I have seen the plan, the main Departmental scheme seems to me to be a practicable one.
1354. *Mr. Humphery.*] You said it was only during the past five or six years that Wolli Creek has been a source of offence to the residents of Rockdale; is that so? Yes.
1355. Do you not remember that for thirty years past the creek has been polluted either by wool-washing or fellmongering establishments? Not for thirty years past.
1356. Yes? Not Wolli Creek.
1357. You do not remember so long back? Yes, I do; but I do not remember its being polluted then.
1358. Well, twenty years ago was it so? No; not twenty years ago. I do not recollect anything being on Wolli Creek twenty years ago.
1359. Although a portion of the Municipality of Rockdale is bounded by Wolli Creek the residents of Rockdale do not in any way contribute to the pollution of the creek; is that so? No; they are so scattered along that creek.

1360. Do you think that the mere dredging of Cook's River will give the relief that you are seeking? Not the mere dredging only. W. G. Judd, Esq.

1361. Will it not be necessary to prevent future pollution of the river by some strict regulations as to drainage from the different boroughs that at present contribute to its pollution? Yes. 9 July, 1896.

1362. What scheme do you think is possible in order to afford you the relief you are seeking? Well, I do not like to venture an opinion upon the alternative scheme, because I am not an engineer. If you get drainage from a watershed where there are thousands of souls located, you must, as a natural consequence, get some sewage in the flood-water, and that is so from Newtown, Petersham, St. Peters, and the surrounding slopes right up to Stanmore. All the slopes in that direction send flood-water down into Marrickville Flats. It is the natural outlet for it, and it then comes into Cook's River.

1363. Is this your view: that if the drainage scheme in connection with Marrickville were carried out the pollution of the river would cease? I would not say that, but it must relieve it.

1364. It would be minimised? Yes.

1365. Assuming that that drainage scheme were carried out, in what way would the river be still polluted? If you keep the dam where the water becomes stagnant some portion of it must become putrid, unless we have floods now and then to clear it. It looks very well this morning, but if you had seen it before these last rains set in, you would have noticed that it was offensive to the sight and smell.

1366. Assuming that the drainage scheme in connection with Marrickville be carried out, and removes any pollution at present existing at Marrickville, will not the river still be polluted by the drainage from other boroughs? Yes; it will, unless there is a proper system of sewerage carried out in these localities.

Mr. John Bowmer, Rockdale, sworn, and examined:—

1367. *Chairman.*] What are you? I have been a market gardener.

1368. *Mr. Lee.*] You are an alderman of Rockdale? I was for twelve years, but I am not now.

1369. You have had the advantage of hearing the evidence given by His Worship the Mayor and Mr. Alderman Judd? I did not hear much of it, because I am rather deaf in one ear; but I heard some of it, and my experience would corroborate what has been stated. 9 July, 1896.

1370. Do you think that either of those witnesses missed any point which you would like to emphasise? They missed one.

1371. Would you be good enough to state it? I will. It is with respect to the causeway, or what is called the dam. The present causeway certainly is the means of keeping back the water on the western side. Nearly forty years ago I travelled across the old causeway before it was raised, when there were 18 inches of water flowing over it. Since the causeway has been raised, I have never seen the water flowing over it. Therefore, in my opinion, to a certain extent it dams the water back.

1372. Can you assign any other cause for the recent pollution of the stream? No; with the exception of this, that the *debris*, as a matter of course, has been accumulating for years, as it has come down from the western side. I remember the junction of Wolli Creek with the present causeway when it was in a better state than it is now in, but as far as I have observed it has yearly been filling up.

1373-4. We have a lot of evidence to that effect, and your evidence corroborates what has already been placed before us;—I should like to know whether you think the scheme proposed would have the effect of removing the foul water from Cook's River? It is my firm opinion that if the scheme is carried out it will do that, and that it will also drain the whole of the Marrickville Flats? If the river is dredged, and the scheme is carried out, as I have read of it, Mr. Darley's scheme will, in my opinion, answer all the purposes for which it was designed.

1375. You are now speaking of Mr. Darley's original scheme? Yes, as far as it has been published.

1376. You know that there has been an alternative or more recent scheme put before us by which he proposes to take the flood-water from Marrickville into a tunnel, and thence through an open channel down to the junction of Shea's Creek? My opinion is that you would block Shea's Creek again very quickly, and destroy nearly all you have done if you were to carry out that plan.

1377. You see the tunnel located on the map by being marked in red? Yes.

1378. Supposing that work were carried out, as well as dredging in Cook's River and Wolli Creek, and if the sills of the Cook's River Dam are lowered, do you not think that that would have the effect of draining Marrickville and permitting of the foul waters passing out of Cook's River? I do.

1379. That is the alternative scheme;—now are you thoroughly acquainted with the original scheme? I would not say that I am.

1380. [*Description of main Departmental scheme read by Mr. Lee.*] Which scheme do you think would be the best? In my opinion, if the original scheme were carried out it would answer the purpose as well as any other scheme I have heard of.

1381. That is so far as keeping Cook's River moderately clean? Yes.

1382. But you are not attaching very much importance to the question of draining Marrickville; that is not the object of your visit here to-day? No; it is not.

1383. All you wish to give evidence upon is the necessity of, and the best means for cleansing Cook's River? Just so.

Mr. John Goode, Rockdale, sworn, and examined:—

1384. *Mr. Wright.*] How long have you lived in Rockdale? About thirty-seven years.

1385. You have heard the evidence given by His Worship the Mayor? Yes.

1386. Do you endorse the statement of the Mayor? Yes; in every particular.

1387. You thoroughly understand the scheme? Yes.

1388. Would you like to supplement the mayor's evidence with anything? There is only one little thing I have thought of. It has been asked if certain things were done would Wolli Creek be still polluted. Of course the cause of the pollution of the river, to a great extent, is the natural flow of the water from the hills, the area from which it comes being so large, and the *debris* being accumulated in the reeds and rushes, and the floods blocking the waters back, and the decayed matter filling up the bed of the river.

1389. You think if this scheme were carried out, Wolli Creek would still be impure? Not if the river had a good scour.

1390. Taking away the present dam altogether and putting fascine banks along the shore? Yes.

1391.

Mr.  
J. Goode.  
9 July, 1896.

- Mr. J. Goode.  
9 July, 1896.
1391. There is another scheme, for lowering the sills of the dam? I think that would alleviate the nuisance.
1392. Thus letting out a large volume of water, and occasionally flooding the river with salt water if it got impure;—you think that would do all that is necessary? Yes.
1393. *Chairman.*] Can you add anything else to what we have heard this afternoon? No; I do not think I can add anything more.
1394. You can simply corroborate it? Yes.

Edwin Godfrey, Esq., Alderman of the Borough of Rockdale, sworn, and examined:—

- E. Godfrey, Esq.  
9 July, 1896.
1395. *Mr. Hassall.*] You have heard the evidence given before the Committee this afternoon? Yes.
1396. Have you anything you can add to it? Well, I think that lowering the sills of the bridge 2 feet is altogether absurd. I have known Cook's River Dam for thirty-nine years. I have seen 5 feet of water on it. I have seen the whole of the centre of it cut right in two in one night. The Government, I suppose, when that dam was constructed, had no engineers in the country, but of late years the Government have had to put up two separate flood-gates there, through which to let the water away. The original scheme, in my opinion, is the one that ought to be carried out. I think it would prevent any nuisance in the future, and make the land round the river habitable, and also enable those who are there to stop there.
1397. But which do you call the "original" scheme? The one with the fascine work. But I think that, stone being so handy, it would be much cheaper to do it with stone, whilst *debris* would not cling to that so much as it would to fascine work. The drainage down Wollie Creek has caused a nuisance. Between the present dam and the railway embankment there are holes 10 feet lower than the sills of the dam, and by lowering the sills 2 feet you have 8 feet of water in those holes. Decayed vegetable matter accumulates there in the summer-time, and the stink is abominable. It is absurd to talk about lowering the sills 2 feet. All the drainage of Bankstown, Ashfield, and back as far as Homebush and Belmore comes into Cook's River; in fact, from as far as Salt Pan Creek the drainage comes into Cook's River; and to ask the people in a little place like Rockdale to pay for the drainage of those people miles back is absurd.
1398. It is not proposed to ask the people of Rockdale to pay for all that;—do you not think that the whole of the municipalities which would benefit by the proposed scheme being carried out have a right to pay something towards the interest on the cost of construction? Well, I do not think that the people of Rockdale have a right to do so. The Government have already deprived us of a square mile of our municipality, for which we can get no rates, and now they ask us to pay for the improvement to Cook's River.
1399. You think that the dam across Cook's River is the means of creating a nuisance, not only to the municipality you represent, but also to many others? Yes.
1400. And yet you expect the Government to come to the rescue and clear away all obstructions, and benefit every private property-owner throughout the whole of those municipalities, whilst the Government are to get no return for doing that, is that it? Yes; we expect that.
1401. *Mr. Wright.*] You said that if the sills of the dam are lowered that will not clear the river, because holes in the bed of the river above the dam are 10 feet deeper? Yes; between the railway and the Cook's River Dam.
1402. But it is proposed to lower the sills 3 inches below low-water mark;—supposing you swept the dam away altogether, those holes would still remain full, and if they are 8 feet below low-water mark the water could not get away? Having the dam removed altogether will allow that water to get away.
1403. If they are 10 feet below low-water mark, how will the water get away? Well, I suppose they will silt up in time.
1404. Your evidence amounts to this, that the dam should be removed and the river dredged, and that would do all that is required? Yes; if the channel were narrowed by fascine banks.

Henry Cooke, Esq., Alderman of the Borough of Rockdale, sworn, and examined:—

- H. Cooke, Esq.  
9 July, 1896.
1405. *Mr. Roberts.*] How long have you been a resident of Rockdale? About thirty-five years.
1406. Then you are thoroughly familiar with the district under consideration? Yes.
1407. Have you been appointed by resolution of the Council to come here this afternoon? Yes.
1408. What is the object of your desiring to give evidence? Simply because of the annoyance and nuisance we have suffered from, owing to the pollution of Cook's River, in consequence of which the Council have received complaints from different people.
1409. And, I suppose, the pollution of Wollie Creek? Yes.
1410. Have you heard the whole of the evidence that has been given here this afternoon by His Worship the Mayor, members of the Council, and residents of the borough? I have.
1411. Do you endorse all that has been said by those gentlemen? I do.
1412. Is there anything you would like to add? Only as regards Cook's River. Thirty years ago we had to cross it for food for our families, and I have waded the river near the dam. At one time, before we had police protection, we could see twenty or thirty people bathing there. I do not think any one dare go into it to-day.
1413. The state of the water is so polluted compared with what it was some years ago? It is.
1414. Have you formed any opinion what work it is necessary to do to remove the cause of the complaints which you make? Cook's River Dam should be removed entirely, and Wollie Creek thoroughly cleaned out.
1415. Is there anything else you would suggest? No.

John Curtis, Esq., Alderman of the Borough of Rockdale, sworn, and examined:—

- J. Curtis, Esq.  
9 July, 1896.
1416. *Chairman.*] You are a resident of Rockdale? Yes.
1417. You have heard the evidence given to-day? Yes.
1418. Do you agree with it? Yes, I do, entirely.
1419. Do you desire to make any further statement on any point which you think the witnesses have left out? Nothing more than to advocate the removal of the dam and the cleansing of Wollie Creek.
1420. That is virtually the same as the others say? Yes. 1421.

1421. You have a thorough knowledge of the district? Yes; I am a native of the district, and have been there all my life—forty-four years. There is no doubt that Wollie Creek is very much filled up, compared with what it was twenty-five or thirty years ago. At that time an old resident living next to my place used to go in his boat down the creek, but at the present time I could walk across Wollie Creek in many places, even after rain. It is almost entirely filled up.

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1422. You attribute that partly to settlement on the watershed and partly to the dam? Yes. If Wollie Creek were cleaned out and there were a bigger opening through the dam it would allow the flood-water to get away more quickly, and Marrickville would not flood so high.

1423. Do you approve of allowing the salt water to come above the dam? Yes, I do. I think it ought to be allowed to ebb and flow.

1424. You approve of the dam which it is proposed to construct near Undercliffe Bridge—the Government propose to put a dam to intersect the tidal water there;—do you approve of that? I do not approve of any dams.

1425. No dam anywhere? No.

1426. What is to happen to all the low-lying lands if you let the salt water in? By cleaning out the debris you would raise the banks, and I do not believe that the salt water would then come in at all.

1427. Your idea is that an embankment should be put anywhere where the bank is low, so as to prevent the salt water from submerging the adjoining lands? That is my idea.

1428. Can you give us any idea of the cost of that? No.

1429. Mr. Humphery.] In what manner is Wollie Creek polluted at the present time? By flooding particularly.

1430. But flooding would not pollute it? Floods wash down leaves of trees, cattle, manure and other things; the creek is blocked up, and when the flood goes down it leaves the debris there.

1431. Is that the only cause of the pollution? There is a tannery, and also one wool-washing establishment. I will not say that they may not help to pollute it a little, but I know of my own knowledge, from visiting the tannery, that they have many filter-beds through which the water runs, and, I believe, they do all they can to send the water to the creek as pure as possible.

1432. How long has the wool-washing establishment been in operation? The one there now has been at work perhaps twelve months. Previous to that there was no wool-washing on the creek for some years. During the last twenty years, wool-washing may have employed sometimes two or three men, and sometimes a dozen, perhaps, for five years, or four years, out of the twenty.

1433. At the present time the only cause of pollution is the flooding? That is my opinion.

FRIDAY, 10 JULY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. CHARLES JAMES ROBERTS, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

The Hon. DANIEL O'CONNOR.

HENRY CLARKE, Esq.

CHARLES ALFRED, LEE, Esq.

JOHN LIONEL FEGAN, Esq.

THOMAS HENRY HASSALL, Esq.

GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

FRANK FARNELL, Esq.

The Committee further considered the proposed Improvement of Cook's River.

Cecil West Darley, Esq., Engineer-in-Chief for Public Works, Department of Public Works, sworn, and further examined:—

1434. Chairman.] The general impression seems to be that the flooding of Marrickville in no way results from the floods in Cook's River? One or two have mentioned that the floods are due to the local rainfall. C. W. Darley, Esq. 10 July, 1896.

1435. Is it not this way—although Cook's River holds the water up, the catchment area in the Marrickville Valley is so great that the flood comes from the watershed into the Marrickville Valley, and the water is held up by Cook's River? It depends upon the rainfall. We may get a local rainfall, that will flood the valley without a flood in the river.

1436. It amounts to a comparison between the amount of the rainfall upon either watershed, and the amount of the discharge? There is no very serious difference of opinion except on that point. I hold that, as long as you are trying to discharge the water into Cook's River, you will always have a difficulty in dealing with floods. You cannot get a fall whilst the river is in fresh, therefore, it is desirable to remove the discharge from Marrickville, if possible, away from the influence of flood disturbances. As long as you attempt to drain into Cook's River there must be times when Cook's River will be above its normal level, therefore you will have a complication arising from the different flood-waters.

1437. The engineer for the Marrickville Council had run a level from the mouth of Marrickville Creek round to where Shea's Creek enters Cook's River, and he makes the statement that the land from both sides is practically level—that any alteration will come from the contraction of Cook's River in its high reaches, therefore all that you would lose would be lost by the contraction of the water, not by a rise in the flood of Cook's River. Do you agree with him? I understand what you say, but I differ from the conclusion drawn. If the river were in the normal state of low water when the levels were run, I do not think he would get a serious difference in the levels. In taking levels it is not easy to run a line to the level of the water unless you adopt proper precautions and put in a tide-gauge, having some person to observe the reading. Unless this is done, it may be very deceiving. When you speak of running a line of levels it does not indicate that the usual course has been taken of establishing tide-gauges. When the river is in flood we get disturbing elements of various kinds. The Wollie Creek coming in at right angles will make a difference. The engineer says:—

In my opinion this action has a great deal to do with the backing up of the waters. It could be rectified in a simple manner by forming a training bank for the waters of both streams, this bank to form a curve so as to train the water in such a manner that they will be united just to the west of the bridge, and taking through it in nearly parallel lines.

After passing the railway bridge the water spreads out over a wide surface, part going to the northern flood-gates and part to the southern. If the water is backed up towards the source you will have a certain amount

- C. W. Darley,  
Esq.  
10 July, 1896.
- amount of artificial head during the freshes in the creek and the river. If you attempt to drain into the river you cannot get as low as if you went down into low water at once.
1438. The question is how much head would do—on that you are not prepared to express a definite opinion? It must be problematical. It is not during flood. From my experience of rivers and the grades they fall at, I expect there would be a difference of quite 2 feet between the flood-level and low water at Marrickville drain and Shea's Creek.
1439. That is to say, the flood would be 2 feet higher at the outlet of Marrickville drain? I should expect it to be 2 feet higher at that point than low water at Shea's Creek, but could not say definitely. No man could estimate it. You have to get the grade of the river, and it is comparatively irregular till it gets past Cook's River Dam. After that the channel opens out very wide, therefore the water cannot rise so high.
1440. I understand that the 2 feet is lost in the slope between the entrance and Shea's Creek? I anticipate that there would be that much loss during a flood in Cook's River.
1441. According to the engineer, it does not appear that there is much difference between the flood-level at the lower side of the bridge and the mouth of Shea's Creek; therefore, the water above the bridge would be discharging at pretty well the same level as about Shea's Creek? You cannot base anything on that, because the water can only get through it at a certain rate. It cannot get through fast enough to raise it at that point. His statement shows that the water rose 2 feet over the dam. That shows that the water was not discharging at any greater rate, therefore it could not raise it on the lower side of the dam.
1442. You discharge it at the lower level, but how much that is you are not prepared to say? I am not prepared to say. I do not think anyone could say. I can only surmise what the result would be.
1443. Your tunnel is 15 ft. x 6 ft.? Yes.
1444. You have seen the statement that a tunnel of that kind would take twenty-four or twenty-five hours to discharge 4 inches of rainfall over a catchment area 75 per cent. of which reaches the intake? Yes.
1445. Is that so? I do not agree with that at all. Some three weeks ago 5 inches of rain fell there in one night, and the next morning the whole of the water was passing through a little iron drain with a sectional area of only 5 square feet. I sent an officer to get the information. A 5½-inch fall took place in one night, and of course there was a rush of water in the morning, but in the afternoon, although delivering into Cook's River at a higher level than we propose to deliver, it was not over the top of the drain that was carrying it. I pointed out to the Committee before that it was quite possible, during a heavy and continuous rainfall in a wet season, that there would be flooding; that the water would rise up over the land as it does now for a short time during high water, but that it would get away certainly in two tides. There would be a temporary flooding. It all depends how the rain falls—whether after a dry season or when the ground is soaked and the pools are filled. In the latter case another rainfall would cause a flood to rise with great rapidity, causing a temporary flood.
1446. Your drain or tunnel discharging into tidal water will be discharging about one-third of its time? It depends upon the level of the water.
1447. I am talking of the discharge into Cook's River as controlled by the rise and fall of the tide in the River? Yes.
1448. Previously you told us that it would discharge during about one-third of its time? If inland it was dry it would be discharging during the whole period, and there would be an effective discharge taking place for one-third of its time.
1449. Have you seen the calculations upon which that statement I mentioned just now in regard to the 2-inch rainfall was based? No; I have not. In matters of this kind you can prove anything by figures.
1450. The catchment area, the amount of water falling on it, and the amount of water reaching the intake, and the discharging power of the drain are all facts, are they not, and a fair comparison can be formed between them? It is really a very complex question, because the tide is rising and falling all the time. You are discharging into water that is always at least 2 feet lower than the valley, and you are tapping the valley in the centre instead of the water having to run another 3,000 feet to Cook's River, so that the water could have come both ways to the drain.
1451. I ask you whether the amount of water available in a certain area, and a certain portion getting down to the intake, could not be fairly estimated, also the discharging capacity of the tunnel, and would not the division one by the other give you fairly correctly the time that the accumulated body of water would require to get through that discharging channel;—does a comparison of that kind seem to be based on any surmise? The tunnel discharge upon the whole area will be one-eighth or one-tenth of an inch per hour of rainfall.
1452. Over the whole area it will take one-eighth of an inch per hour? Yes.
1453. In eight hours it will take off 1 inch? Yes.
1454. You are taking its full discharging power? Yes.
1455. Then 2 inches would take sixteen hours to go off; but still, it is an intermittent discharge;—how much that would lengthen the time you are not prepared to say? The water does not come down into the valley as fast as it falls. We had a 5-inch fall the other night, and it was running away in the channel one-thirteenth the area of the tunnel.
1456. That is your statement with regard to discharging power. It could discharge 2 inches in sixteen hours, but that sixteen hours must be increased somewhat—you cannot say how much, owing to the intermittent discharge of the drains? Yes; that would be the mean discharge.
1457. The fall of your drain is about 1 foot in 3,400 feet? Yes.
1458. What is the fall in your usual storm-water discharges? They vary very much; from 1 in 2,000 to 1 in 3,000 is the usual thing. It would vary according to our gradient. That is a very fair gradient.
1459. The storm-water discharge is from 1 in 2,000 feet to 1 in 3,000 feet, and is regarded as sufficient? Yes.
1460. Is there any trouble being experienced with the storm-water discharge in any part of the suburban area at present, from sediment. Have you to employ men to throw the stuff out of them? Yes; in many cases.
1461. With as good a flow as this, is it necessary to send men with shovels to throw the stuff out? Yes; but many have not got that gradient.
- 1462-3. What is the fall that you require for the sewage as a rule? About 1 foot in 2,500 feet in some of the larger sewers.

1464. The clear water flowing into the Sydney water supply has about the same fall as the storm-water discharge? The same as the proposed tunnel. C. W. Darley, Esq.
1465. Do you think there is any probability, with this intermittent discharge, of any sediment settling in the drain? I do not think there is much risk of a deposit in the drain. I know there is a good deal of deposit in portions of the Marrickville drain, but that is in the portion near to the slope; but this discharge commences a good distance from the foot of the hill. A large amount of sediment is brought down the streets, and that will come down into the main channel, but the current will be so slow from the foot of the different hills between that point and the mouth of the tunnel that the sand will all be deposited before it reaches the tunnel. 10 July, 1896.
1466. The velocity at 1 in 3,000 would be how much?  $1\frac{1}{4}$  of a mile per hour.
1467. At what velocity would water require to travel to move ordinary sand? A great deal would depend upon the nature of the bottom.
1468. Would 1 mile an hour move ordinary sand in a pipe? Hardly.
1469. If the outlet were choked, there is a great probability, certainly a possibility, of sand depositing in the tunnel? My answer to that is, that there will be three channels approaching it, each of which should be larger than the tunnel, therefore the velocity in the channel will possibly be one-third or one-fourth of that through the tunnel, so that the sand will be deposited in the channels, not in the tunnel.
1470. The efficiency of the scheme, therefore, depends upon the sand not getting into the tunnel? If the sand reaches the tunnel it will go through, because the velocity that brings it to the tunnel will carry it on. The velocity will be greater in the tunnel than in the channel.
1471. It is necessary to intercept the sand before the water gets to the tunnel? Yes.
1472. Therefore if the intercepting canals be not widely constructed and kept clean the sand will get into the tunnel? There is no evidence that there is any great quantity of sand there. There is no great bank of sand at the discharge of the Marrickville drain into Cook's River.
1473. All storm waters carry a large quantity of sand? It all depends upon the nature of the streets. In all storm water there is a certain quantity of sand running off the streets, but in this case the sand will be deposited at the foot of the hill; it will not reach the tunnel.
1474. You think it undesirable that it should reach the tunnel? Certainly; it is better that it should not. The water in the channels will be running at a much smaller velocity than the water in the tunnel, therefore, there will be nothing to bring the sand along.
1475. Do you think that the railway embankment has contributed to hold floods up in Cook's River? No doubt it has diverted the course of Wollie Creek. The creek is thrown right against the course of Cook's River.
1476. It has contributed to it then to some extent? I think it must tend to keep up the water.
1477. Marrickville Flats being 3 feet below high-water the only way to keep them absolutely clear would be by a pumping scheme? Yes; any drainage system into Cook's River will only grant a certain amount of relief. No doubt the tunnel will dry up the lower levels, but to make sure of keeping the water off the surface nothing short of pumping will do.
1478. These are at the best a means of mitigating it? Yes.
1479. You view the scheme as a storm-water discharge? Yes; either scheme.
1480. From various municipalities certain drainage finds its way to the centre of Marrickville Valley? That is the present storm water discharge for it.
1481. Is that to be the storm water discharge for those municipalities for all time, or, in your opinion, will the storm water be intercepted upon a higher level? A portion of it will be intercepted, but only a small portion, by the sewerage works. A certain portion of the water from the roofs and the yards will find its way into the sewer.
1482. But speaking of the main flood waters? At present there is no proposal to be carried out to intercept it at a higher level.
1483. Will the storm water seek the Marrickville Valley as a discharge, or will there be some scheme which will take the place of the Marrickville Valley? It will always have to go by the Marrickville Valley.
1484. For all time? Yes.
1485. In your opinion we need not take into consideration the question of intercepting the storm water from those municipalities on the higher land? I have heard of no scheme for the purpose at all. I do not know how it could be done.
1486. Could it not be done by going round the foot of the hills, and intercepting it sufficiently high above the high-water in Cook's River for discharge by pumping? There was a proposal to do that, but it worked out very costly.
1487. Can we dismiss that for the present? Yes; it would cost an immense sum of money.
1488. Therefore, for some considerable time to come, either the alternative scheme or the drainage centre of Marrickville Valley will discharge the storm waters? Yes.
1489. Do you regard Cook's River as likely for all time to be the storm-water discharge for the municipalities lying on its watershed? Unquestionably it must be.
1490. Will Wollie Creek be the storm-water discharge for the municipalities lying on its watershed? Yes.
1491. Therefore Marrickville Creek, Cook's River, and Wollie Creek are the natural outlets? Yes.
1492. The only point doubtful is whether the water should be permitted to go down Marrickville Creek, or to find an outlet by Shea's Creek? Yes.
1493. Are storm-water discharges as a rule regarded as a liability of the State, or of the municipalities interested? Where they are improved by artificial means the storm-water discharges through municipalities have been charged to the Water Board.
1494. Therefore it is a reasonable thing that the alternative scheme or the discharge down the centre of Marrickville Flats is a legitimate charge to those municipalities that furnish the storm waters? I think so. It would be necessary to tax the district to pay for it.
1495. But Cook's River and Wollie Creek being tidal waters, you do not regard them as a legitimate charge? No; there is no work done on them.
1496. But if works were carried out on Cook's River and Wollie Creek, would it be a legitimate charge to the municipalities? I do not think so.

- C. W. Darley, Esq.  
10 July, 1896.
1497. Your discharging area will be about 350 feet wide, just below the railway bridge in Cook's River? Yes.
1498. That appears to be enough to carry any water coming down Cook's River, Wollie Creek, and Marrickville Creek? It is quite sufficient.
1499. Supposing that the sluices were taking the places of the present dam, how much would it cost if it were left 350 feet wide? Do you mean to cut out 300 feet and put in sluices.
1500. Yes? The sluices constructed in 1876 at the south end, 90 feet, cost £4,600. Cutting out the bank and putting them and a bridge over the top cost £4,600.
1501. What would it cost now? It would cost £4,000 to do the work now, but you would have to go 2 feet lower. They are not low enough.
1502. Can you tell us approximately what would be the cost of the dredging necessary in Wollie Creek and Cook's River, above the dam, to put them in a fair condition;—your estimate here is £4,000? I put down £4,000, thinking that that would do all that was wanted. We should have to build a pontoon inside the dam and move one of our existing dredges into it temporarily.
1503. If Cook's River and Wollie Creek were cleaned up and sluice gates 300 feet across were erected, the river would be placed in fairly good order? It would.
1504. It would be sufficient to allow the accumulation of water to go out? I think so. It would let the flood-waters go out and prevent any great accumulation of sediment. I read in the evidence that Wollie Creek brought down a great deal of sand, but there is no indication of sand in it, there is nothing but mud. The presence of rushes indicates that there is no sand moving. You never find sand moving through a reed bed.
1505. You have in your original scheme made provision for a dam for a short distance up Wollie Creek and near the bridge? Yes.
1506. Are we to infer from that that if the flood-water went higher up beyond the fascine bank which you propose to construct, it would damage the property higher up Wollie Creek or Cook's River? If you did not put these dams down, the salt-water would go right up and cover all the flats on Wollie Creek.
1507. Is there much flat land up Cook's River? There is a considerable area towards Canterbury.
1508. You regard it as impracticable to allow the salt-water to flush this creek right out? You cannot do it without flooding a great deal of country.
1509. The original scheme shows a bank round the Campbell property? Yes; but it would be no improvement to a property to have to live inside a big bank.
1510. *Mr. Lee.*] Do you wish the Committee to understand that if the other scheme is adopted it will not entirely relieve Marrickville of flood-water? It will not.
1511. To make that a complete success there would have to be a pumping scheme? Either intercepting drains on a high level, or a pumping scheme.
1512. In the former case it would belong especially to the province of the municipalities? Yes.
1513. As far as the Departmental schemes are concerned, neither of them will completely remove the nuisance? No; they will not.
1514. The alternative scheme would prevent the inundation that goes on? There might be a temporary inundation, but it would be very rapidly relieved. At present the water remains on the land for weeks. If that scheme were carried out, the water would only remain two or three days, and not to the same depth as now.
1515. Would not temporary inundation mean the flooding of some of the buildings that are there? They should not build there. It will enable them to use the land for grazing and other purposes.
1516. Would the original scheme prevent that inundation? No; it would not.
1517. Then these are only provisions to take the storm-waters off a little more quickly than they go at present? It will be a little quicker, and also better drainage altogether.
1518. Those small residences in the lower portion of the area will continue to be inundated? They will always be liable to be inundated when there is a heavy fall of rain, but after the scheme is carried out, I do not think it will be so bad as it is now. Now there may be no local rainfall, yet they will be inundated by flood-waters passing down Cook's River.
1519. Could any scheme be devised by which that could be completely prevented? Certainly.
1520. It would involve a heavy pumping scheme? Pumping and high-level drains intercepting the water. It would cost more than the district is worth.
1521. *Mr. Wright.*] In the particulars you have given us you give one area as 3 feet above high-water mark, and so on, in regard to different areas, and you have given an area of 176 acres;—does that embrace all the other areas? Yes; the greater in every case includes the lesser.
1522. Can you tell us how many residents there are on the lower areas;—are there any residences on the areas 3 feet, 2 feet, and 1 foot below high-water level? There are several residences in the area 1 foot below high-water, and some in the area 2 feet below high-water.
1523. I presume that if that land were acquired by the Government the difficulty of draining the remainder of the land would be very much lessened? Yes.
1524. And an effectual grade would be obtained? It would be a very simple thing to deal with all that above high-water mark, or at the level.
1525. To effectually deal with these low lands that 109 acres would have to be acquired? Yes.
1526. Unless that portion is set apart either for a recreation ground or as a swamp, you cannot effectually drain the area? It might be a little less than 109 acres. That means a very large storage. It would take an excessive rainfall to fill that up to high-water mark.
1527. Supposing that 50 or 60 acres were resumed and set apart as a storage reservoir, could you deal effectually with it? If 60 acres were set apart to be occasionally flooded more or less, then the rest could be easily dealt with.
1528. Could it be drained by gravitation? Yes.
1529. Supposing that 60 acres could be acquired at £100 per acre, would that be cheaper than carrying out the scheme now proposed? People complain about it being unhealthy on account of the flood-waters resting on it. They object to the miasma arising from the swamp.
1530. If 60 acres were acquired by the Crown would it take many years to raise it a foot or two by tipping street sweepings into it? No; no provision is made to compel the inhabitants to contribute towards the expense

expense of this undertaking. I thought it would be dealt with in the same way as the storm-water channel. C. W. Darley, Esq.

1531. If the Government have to undertake the cost of draining this land by any of the schemes suggested, would it not be cheaper to acquire a certain portion of the land and use that? It would be. 10 July, 1896.

1532. *Chairman.*] In your opinion, would it be justifiable to charge the draining of the Marrickville Flats to the various municipalities that contribute the flood-waters to it and the storm-water channel? I am doubtful whether it would be a fair thing to charge them under the Act as it is now.

1533. Are there any similar cases? There are some where it is very doubtful whether they are legally a proper adjunct to the sewerage system.

1534. Do you think the Government ought to carry out the scheme, or is it the work of the municipalities? I think the Government should carry it out and tax the municipalities.

1535. You say that we cannot do it? It could be done under a special Act. The work would require a Bill to authorise it, and in the same Bill there should be a clause to levy a rate on the district. It is so essentially a local improvement that I think there ought to be a levy on the district towards the cost.

1536. On the district contributing the flood-waters? On the watershed.

D'Arcy Hubert Bucknell, Esq., Tempe, sworn, and examined:—

1537. *Mr. Farnell.*] How long have you been resident in the Cook's River district? We have owned our residence, which is a frontage to Wollie Creek, upwards of thirty years. D'A. H. Bucknell, Esq.

1538. What is the area? We have 20 acres, and it has a frontage to the creek.

1539. Is it affected by the stormwaters which accumulate there? Yes.

1540. Have you had under consideration the proposed scheme for doing away with the nuisance? I have seen the original scheme. 10 July, 1896.

1541. Will you state your views on the matter? I do not know anything about the alternative scheme, and I do not wish to give evidence as an expert on either scheme, but as a resident of Arncliffe having 20 acres of land with a frontage to Wollie Creek, I thought I could not do any harm by tendering my evidence to the Committee, and by pointing out that Wollie Creek and Cook's River, the natural outlets for the watershed around that district, have been very much impaired by reason of the dam put up by the railway people, and now, especially in the Wollie Creek, there is practically no current at all, whereas up to eight or ten years ago we used to be able to bathe there with great comfort, and even drink the water, but the state of affairs is now so bad, not only so that you cannot bathe, and cannot even let cattle drink the water, but dogs cannot swim in the water, it is so stagnant and dirty. This has been brought about to a great extent by the mouth of Wollie Creek being stopped by means of the railway embankment, and also by the pollution that has been allowed to run into the creek. I say that if anything is to be done with the view of improving that district, and allowing Cook's River and Wollie Creek to be the natural outlets of the water, then Wollie Creek and Cook's River should, in my opinion, be clear, and that quite irrespective of whether the low-lying land of Marrickville should be effectually drained. The difficulty in regard to these low-lying lands of Marrickville should be separately dealt with, and if Mr. Darley's scheme, namely, making a dam near Cook's River or building an embankment a small distance up Wollie Creek, will have the effect of making our land more liable to flood, or if it has the effect of letting the salt water come up, then it will be a serious matter for compensation. If the salt water is allowed to rush right in, there can be no doubt that the land, which is under ordinary circumstances very valuable agricultural and grazing land, would be very much damaged; and if the dam which is intended to be built by Mr. Darley has the effect of preventing the waters of the creek from running away, and flooding our land very much, then it is very possible that under both these circumstances the Government will be rendered liable for a very serious amount as compensation. The nuisance which exists along Wollie Creek cannot be exaggerated in any respect. To anybody who can afford to leave, it is almost impossible to live there for any lengthened period. Anybody who is able to do it likes to get away from the district periodically to recruit. The stench arising from the pollution of the creek and the stoppage of the current is enormous, and cannot be exaggerated.

1542. What do you think is responsible for the pollution of Wollie Creek? There is no doubt that the tannery people are greatly responsible for it and the stagnation that has arisen by reason of the railway embankment.

1543. Was this area, which you say you are interested in, subject to floods years ago, before this complaint in regard to the pollution of the river first arose? We had slight overflows of water, but they ran off very quickly.

1544. Has the present condition of things been brought about since the erection of the old dam? Yes.

1545. You think that the erection of the railway embankment has aggravated the evil? Yes; very seriously.

1546. Is there an extensive area subject to floods owing to the backing up of the water? A very considerable area. I should not like to say what the area is.

1547. You think that the dredging of Cook's River and the removal of the obstacles of which you speak, and the dredging of Wollie Creek would, to a great extent, remove the evil? To a great extent.

1548. What municipality is your land in? Rockdale.

1549. Has the Rockdale Council taken any steps to mitigate the evils arising from the pollution of the river? Yes; I think it has done a great deal to remove M'Namara's boiling-down establishment, but there is a difficulty with regard to the tannery, because Wollie Creek is a boundary between two municipalities. I do not see that they ought to allow the nuisance to continue, but they say that that is the difficulty. Of course, it would be an invidious thing for a private individual to take up a case like that, and it is very expensive, otherwise we should have done it ourselves.

1550. I understand you are in favour of the free admission of the tidal waters up Wollie Creek and Cook's River as far as they will go? You mean to take the dam away.

1551. Yes, to remove the dam? No, I am not in favour of that. I am afraid that that would inundate so much land with salt-water that it would do an enormous amount of damage.

1552. How would you provide for a freer means of escape for the water—by clearing the creek? I think it would almost run itself, if you made a larger opening in the railway bridge.

1553. Does not the present dam back the water up to a certain extent at the present time? I believe it does, but these flood-gates might be enlarged. I am afraid that letting in the salt-water would do a great deal

D'A. H.  
Bucknell, Esq.  
10 July, 1896.

deal of harm, but I do not come to speak as an expert. I only wish to bring before the Committee the fact that there is a good area of land there, and that it will be a serious matter not to regard the question of compensation in anything that is done. I say that irrespective of whether anything is done with the very low-lying land at Marrickville.

1554. Can you tell me whether much sewage matter finds its way into Wolli Creek? It is the catchment for a large district, and there must be a good deal one way and another.

1555. And when the creek becomes swollen, and owing to the action of the back waters, do you think that sewage matter becomes distributed and thus makes the locality offensive? Yes, there is no doubt about it. I think it is possible that in a very dry time you may be confronted with a very serious disaster of plague in the district. The stench is something tremendous. It is outrageous in dry seasons.

TUESDAY, 14 JULY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.  
The Hon. CHARLES JAMES ROBERTS, C.M.G.  
The Hon. WILLIAM JOSEPH TRICKETT.  
The Hon. DANIEL O'CONNOR.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
THOMAS HENRY HASSALL, Esq.  
FRANCIS AUGUSTUS WRIGHT, Esq.  
FRANK FARNELL, Esq.

The Committee further considered the proposed Improvement of Cook's River.

John Wesley Watkin, Esq., Director of the Sydney Permanent Freehold Land and Building Company (Limited), sworn, and examined:—

J. W. Watkin,  
Esq.  
14 July, 1896.

1556. *Chairman.*] What are you? An auctioneer.

1557. *Mr. Humphery.*] Are you also a director of the Sydney Permanent Freehold Land and Building Co. (Limited)? Yes.

1558. To what extent is your company interested in the land that will be affected by the proposal now under the consideration of this Committee? I suppose that the total area of the estate, which is known locally as the Undercliffe Estate, is something over 450 acres.

1559. Undisposed of? Not been subdivided—not been touched. It is intact.

1560. Will you point to its locality on that map? It is in Cauterbury, on the southern bank of Cook's River, starting from below Undercliffe Bridge, and then going right up the river to Thomson-street, with the exception of a few blocks on Nobbs' Flat, which form a portion of Nobbs' subdivision. We are very largely interested in land on the banks of Cook's River.

1561. But the land in which you are interested would not be affected by the alternative scheme, as shown on the map, for draining Marrickville Flats to Shea's Creek? No.

1562. Are you familiar with all the proposals that have been from time to time submitted for the purpose of removing the nuisance complained of? Yes; I have watched them through the papers. I have also seen this plan, and I know Mr. Sharkey's proposal, because I was consulted by him at the time he was attempting to acquire land in Marrickville Flats.

1563. You have expressed a desire to be examined by this Committee with regard to the proposals now under consideration? Yes.

1564. Do you desire to make a statement? Yes; I desire to protest against the construction of a concrete dam just below Undercliffe Bridge. The reasons why I object are that it would only be removing the nuisance further up the river. That concrete dam will be just below Undercliffe Bridge, and opposite portion of our estate.

1565. Will you state your reasons for objecting to the construction of that dam? It would silt up the river, and only remove the nuisance to a place further up the river. I am more concerned, perhaps, in the source of Cook's River than in its mouth. I do not know whether you gentlemen have been along the banks of Cook's River, if not, I would certainly recommend that before you close this inquiry you should take a tour right up its banks to its source. I contend that the first mistake was in making the Cook's River Dam at Tempe—I mean the dam on the Cook's River Road. It seems to me that the engineers, or the Government officials, in the past, have never recognised in any way the possibilities of Cook's River. By constructing that dam across the river, they have destroyed it as a water highway. Then the railway people came along and again made the river worse by reducing the space by constructing an embankment. Then, again, the Board of Water Supply and Sewerage came along and put another barrier across the river by the construction of that sewer. What I want to impress on the Committee is that I should like to see Cook's River restored to its natural tidal condition.

1566. That is the full scope of the evidence you wish to give? Yes; I wish to impress on the Committee that they should look to the future, and, if possible, take away the obstructions which prevent the tide having a full ingress into the river, as far as it will go.

1567. In your opinion the removal of the Cook's River Dam at Tempe will effect all that is necessary in connection with the abatement of the evils that exist? Yes; and dredging the river, and taking away the sugar-works dam.

1568. Would that prevent the flooding of Marrickville? No; I cannot say that it would.

1569. Are you aware that the proposal before us is one for the drainage of Marrickville as well as for the improvement of Cook's River? Yes.

1570. You do not desire to give any evidence with regard to the drainage of Marrickville, but simply wish us to understand that, in your opinion, the proper way to deal with Cook's River is to remove the dams and dredge the river? Yes; and, if possible, make it navigable for small boats right up to the Liverpool Road.

1571. Assuming that the Cook's River Dam at Tempe were removed and the river were dredged, as suggested by you, do you think that that would prevent the pollution of the river? I consider that the dams have tended to increase the pollution of the river.

1572. Has not the settlement that has taken place during the last twenty years between the Cook's River Dam at Tempe and the Liverpool Road, in proximity to the river, tended to its pollution? Perhaps the construction

construction of roads has tended to bring down the *debris* from the roads into the river; but I do not know that there has been much pollution in the shape of sewage going into the river. Of course there must be a certain amount. We have no sewerage up there yet.

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1573. But has there not been a drainage into the river from all those surrounding high lands? Yes, naturally so. Cook's River drains a large watershed.

1574. What you propose would simply abate but not remove the existing evils? I contend that if you allow the salt water full ingress into the river, it must, to a large extent, abate any nuisance that now exists. At present the dams merely impound sewage matter. It must be healthier to have the tide running than to have still water.

1575. You are aware that the dam to which you have referred was constructed more than half a century ago? It was constructed for the sugar-works in the old days.

1576. More than half a century ago? Yes.

1577. And certain rights may have been acquired since then? I am not a lawyer, and I do not understand that matter.

1578. They would have to be considered, there being fresh water now where formerly the water was salt? I should not call it fresh water.

1579. Is there not any fresh water in Cook's River above the dam? Not water fit for a dog to drink.

1580. I am not saying that it is water that might be used for drinking purposes—the water may be polluted? It is polluted water.

1581. But it is not salt-water? No; because the dam keeps the salt water from coming up the river.

1582. You are speaking now of the dam at Canterbury? Yes; the sugar-works dam at Canterbury.

1583. Not the Cook's River Dam at Tempe? No. But unless that is dealt with the tide could not get up to the sugar-works dam.

1584. I was under the impression when you offered to give evidence that it would affect the entire scheme, but apparently you have only one object in view, and that is the improvement of the river? The object I have in view is, at all events, to render it possible in the future, if not to-day, to improve the river—not to put any more obstructions in the way of the improvement of the river.

1585. And your protest is against any dam that might have the effect of continuing the nuisance? Yes; I protest against the proposed concrete dam near Undercliffe Bridge.

1586. Are you aware that if the Cook's River Dam at Tempe were removed the low-lying lands at present above the dam would be submerged? Well, so much the worse for those low-lying lands. But I suppose that the dredgings out of the river could eventually be utilised for filling up those low-lying lands. They have very little value at present. I say, restore Cook's River to its original condition, as far as possible, and improve it by dredging and widening where possible.

1587. When did your company acquire this large property you speak of? We have had it about twelve or thirteen years.

1588. Has it been depreciated in value since you purchased it, by reason of the existence of the Cook's River Dam at Tempe? The fish in Cook's River died a couple of years ago between the sugar-works dam and the lower dam, and Cook's River was what you may call a cesspool the summer before last. I can recollect the time, and I dare say that Mr. Humphery, and some other members of the Committee can remember when Cook's River was a nice salt-water stream, or when, at all events, salt-water fish could live in it, and I certainly consider that the condition of the river would have depreciated the value of our estate the summer before last if we had had it in the market.

1589. Have you considered or estimated the area of land that would be submerged in consequence of the removal of the dam? No; I have not; that would be a matter for a surveyor. I daresay that a portion of our property on Nobbs' Flat would be submerged; we have some low-lying land there. But I consider that the benefit to be derived from restoring Cook's River to the condition of a tidal stream would more than compensate us for any low-lying land we might have submerged.

1590. Was the river ever navigable past Nobbs' Flat and up to the Liverpool Road? It is navigable now for small boats a considerable distance above the sugar-works dam.

1591. Up to Liverpool Road? I recollect when it was navigable up to Hilly's Ford; but it is not so now. You could not get within yards of it. But it is capable of being made navigable up to Liverpool Road.

1592. *Mr. Trickett.*] A number of witnesses have suggested that the Cook's River Dam at Tempe should be left, but that the sill should be lowered so as to let the water flow a little more freely; and that for a certain distance up the banks of the river should be cleared of all growth, and the corners trimmed off; and that the river should be dredged, and certain holes filled in;—do you think that that would have a beneficial effect? It would not have such a beneficial effect as I think the scheme which I suggest, of making Cook's River a tidal river. Lowering the sill would only partially remove the difficulty.

1593. But does it not occur to you, as it does to most people, that Cook's River is a very slow-running river, and that if the tide did run right up the river the river would still remain, at any rate, a partial nuisance, owing to the growing population all around, and the filth that must inevitably be washed into the river? I should think that if the filth ran into a salt-water river the nuisance would not be anything so great as if the filth ran into what we may call a semi-salt or fresh-water river. The sea water must act as a deodorant.

1594. But even in parts of the Parramatta River, where there is a large scope of water, we have evidence of pollution of the river near Parramatta, where it is a quarter or half a mile across? Yes; but look at the filth that is poured into the Parramatta River from the asylums and other places. Besides, the Western Suburbs Sewerage Scheme will take in all the suburbs along Cook's River, and Cook's River could be restored to its original condition of a beautiful stream of salt water.

1595. But we have no evidence that all those suburbs are to be dealt with under the Western Suburbs Sewerage Scheme;—all the evidence we have is that Marrickville and one portion of Canterbury will be so dealt with? I am talking about a general sewerage scheme that would embrace all the suburbs up to Strathfield.

1596. So am I, but there is no evidence of it; the Engineer-in-Chief, the other day, could not give any evidence of it? Are then all the people about Strathfield, and other places, to be denied the right of sewerage.

1597. You say it ought to be dealt with? As a matter of course, it must. We have no sewerage at Ashfield and Burwood, and other places, but there will have to be, and it will stretch to other suburbs, and will drain all the suburbs that now drain into Cook's River.

1598.

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1598. But a great many rights have cropped up, and that is a difficulty? Where are the rights that would be injured.
1599. If you had 100 acres of land which were now valuable pasture and grazing land—as evidence has been given here concerning another landowner—and if letting the salt water into the river would submerge that land, and make it utterly useless, I think you would object? That is a bogie. What is the value of land that is below high-water mark.
1600. *Mr. Clarke.*] From your evidence it appears that the only remedy you think suitable would be the removal of both the Tempe Dam and the sugar works dam? Yes.
1601. In that case what would become of the low-lying lands? The low-lying lands would have to be filled up to the high-water mark.
1602. By an embankment or something of that kind? By an embankment, and by the dredgings out of the river. They were low-lying before the river was interfered with. The river has not, in any way, reduced their level.
1603. Still, the Committee understand that the drainage of Canterbury and several other municipalities flows into Cook's River at the present time? Yes; but is not that an argument in favour of making Cook's River a tidal stream. Will it not be much healthier if the sewage does flow in a tidal stream instead of into a lake, which is really only impounded sewage.
1604. No doubt that would be the case; but there are several interests to be looked after, including those of the people who bought land there? I would look after the interests of the future. Do not put obstructions across the river, and thereby destroy the possibilities of it.
1605. But supposing that the Tempe Dam were removed, that would necessitate the erection of a bridge to enable the people to get across the river there? Yes; that would not cost much. I do not suppose you would have to remove the whole of the causeway across the river there.
1606. It would not be possible to remove the railway embankment, because that is a fixture? No, it would not. That was the second mistake that was made.
1607. You think that that railway embankment has prevented the waters from flowing as freely as they formerly did? I think it has caused a great deal of silting up about there. I travel a good deal, and from my personal observations in doing so it seems to me that the river-flats have been considerably raised by that embankment. You can see more shoal-water. I think that the engineers in the past have looked upon Cook's River as of no account at all. I wonder they did not propose to fill it up altogether.
1608. Still do you not think that those people who have, unfortunately, bought low-lying lands at Marrickville, and have built upon them—lands which, in my opinion, ought never to have been built upon—are entitled to some means, by embankment or otherwise, of preventing those lands from being flooded? No doubt there are lots of suburbs of Sydney unfit for habitation, and Parliament should legislate on the question. Sir James Martin tried to do so forty or fifty years ago.
1609. *Mr. Lee.*] Have you taken the trouble to make yourself acquainted with the exact proposal that is before the Committee? I have concerned myself only with the question of the proposed concrete dam.
1610. That is only a very small portion of the proposal? I did not come here to give evidence about Marrickville.
1611. But I am speaking of Cook's River. Your object in being here to-day is to show that something must be done to purify the river, and also something that should be done to maintain it in the future? That is the main object of my giving evidence.
1612. If the proposal before the Committee were carried out, would that meet with your views? Not at all. I have told you that I object to dams.
1613. Your reply is that there should not be a dam either at Undercliffe Bridge or at Wolli Creek? Yes, all dams are a nuisance.
1614. You see that the object of the proposal is to do two things—first, to prevent flood-waters from entering Marrickville Flats, and to drain off flood-waters there, to a certain extent, and then to admit of Cook's River draining itself—on the whole you object to it? I do not object to your improving Marrickville, or Wolli Creek, if you can do it without interfering with the full ingress of the tide into Cook's River.
1615. You are an advocate for the admittance of the tide into Cook's River? Yes; and for dredging it, and deepening it—if possible right up to Liverpool Road.
1616. There should be no dams to obstruct the tide? On the river no dams at all. Improve the banks as much as you like by fascines or anything else, but do not interfere with the main stream.
1617. Your evidence is, seemingly, from a Cook's River point of view only—you are taking no consideration as to the part of the proposal for the draining of Marrickville? No; I did not come here to give any evidence about Marrickville. Still, I believe that the proposed embankment at the mouth of Marrickville Flats would be a great improvement if you can arrange to pump the water over it into the river. I am conversant with Mr. Sharkey's scheme. He proposed to pump the water over that embankment into the river.
1618. Are you acquainted with the alternative scheme submitted by the Engineer-in-Chief? I know what it is. It is the construction of a tunnel to Shea's Creek.
1619. It is proposed to do this: Have a tunnel to Shea's Creek with flood-gates to drain the Marrickville Flats, put a dam across Marrickville Valley to prevent the inflow of the water from Cook's River, dredge Cook's River and Wolli Creek for the purpose of giving an outlet for the waters, and lower the sills of the Cook's River Dam at Tempe 2 or 3 feet in order to give a greater fall;—do you think, leaving Marrickville out of the question, that that proposal would be sufficient to effect the purposes you have in view? No.
1620. Bear in mind that it is not proposed to put dams at Undercliffe Bridge or Wolli Creek, but that it is proposed to dredge the river, and to lower the sills at the Cook's River Dam? Will lowering the sills make the river navigable—admit of your getting a boat through.
1621. No? Well, that is what I object to. I say make Cook's River navigable.
1622. For what? For a canoe if you like, or for a flat-bottomed punt.
1623. You are aware that if the proposal which you suggest were carried out there would be a large expenditure of public money;—are you prepared to offer any evidence as to whether it should be carried out on the betterment principle? I have not considered that question.
1624. Can you cite any cases where works of this character have been carried out by the Government without

without imposing a betterment tax or a local tax? I do not suppose you will find any stream in England or in any other civilised part of the world which has been dammed as Cook's River has.

1625. Never mind that; can you cite any case in point? No, I have not looked up the question.

1626. *Mr. Wright.*] You are aware that there is a large settlement at Marrickville? Yes.

1627. And that under any scheme, except the alternative scheme for draining Marrickville, all the drainage must come into Cook's River? Yes.

1628. If the river were restored to its normal condition, the dams removed, and the river dredged, would not the large population which is settled in Marrickville and the surrounding districts soon silt up the river, even by the washings off the streets? It surely cannot silt it up as fast as Cook's River Dam and the railway embankment.

1629. Why not? Because the stream would keep it in motion.

1630. In twenty years the present population will, very probably, be doubled? All the more reason for making Cook's River a great water highway.

1631. Do you not think that with a large population the mere surface washings would, in the course of time, absolutely silt up Cook's River? No; I do not think so. I think the municipal councils will require to have silt-pits, as in Sydney, to prevent sewage from going into Cook's River.

1632. I am speaking of stormwater. If the population in the district is doubled, and the whole of the stormwater goes into Cook's River, would it not in ten years be absolutely filled up? If so, that is an argument in favour of making it a *bona-fide* salt-water river.

1633. You have lived long enough to see the foreshores of portions of Sydney harbour reeking with filth? Well, it is a disgrace to us, if it is so. We should try to make the people along Cook's River cleaner than some people along the foreshores of Port Jackson have been.

1634. You want Cook's River to be a tidal river, and my contention is, that if you remove the dams, and dredge it completely, and clear it as deep as it was when Captain Cook came here, in twenty years it must be filled up by natural storm-water drainage? Then you would dredge it out again—keep it clean.

1635. *Mr. Fegan.*] Do I understand you to say that the property you represent is along the south bank of Cook's River? Yes.

1636. Four hundred and fifty acres? Yes; it stretches to Wolli Creek.

1637. You are intimately acquainted with Cook's River? Yes; with Cook's River along the frontage we are interested.

1638. Do you remember when it was a tidal river? No; Cook's River Dam was built before I was born, I expect.

1639. And yet, up to the present time, there has never been a request that this river should be made a tidal river? I do not know about that.

1640. Have you ever heard it asked for before? Yes; I have talked to dozens of people about it.

1641. Has any action been taken by the public in reference to the matter? It has been mentioned by candidates for Parliament.

1642. That shows the lively interest they take in it. I understand you to say that your proposals are simply to remove the dams, and allow the river to have a free scope? Yes; and to dredge and deepen it.

1643. Do you not think that the Government would be liable for damages for allowing salt water to come on private property? That is a legal question I would not pretend to answer. But if that property is below high-water mark, I cannot see where the damage would come in.

1644. But people have bought land in the vicinity of Cook's River since the erection of the dams, and if the Government were to remove those dams, and to allow the salt water to come on to their property, would not the Government be liable for damages? That is a legal question, which I would not be prepared to answer. Land that is below high-water mark can have very little value.

1645. How far is your land from the river? It stretches along the southern bank of the river. It has a water frontage. On one portion of it there is a 100-ft. reserve from high-water mark.

1646. What portion? On the upper portion, towards Thomson-street. There is also another reserve.

1647. As a business man, you generally look at the cost of a scheme of this kind, and if you cannot see a return for the outlay of money, you say it is not worth carrying out? I should say so.

1648. In the event of those dams being taken away, do you not think that the Government would be liable for damages on account of salt water going on to private property, because you know that salt water damages grazing land, or anything like that? That shows, then, that the Government in the old times gave grants for land which was below high-water mark.

1649. But that is not the question here? It comes in.

1650. If it is a fact that the Government would be liable for damages, do you think it would be wise for the Government to take those dams away? I certainly think that in the interests of the whole district and looking to the future, it would be wise for the Government to do it.

1651. Taking your own proposal that those dams should be taken away, who should pay the cost? The Government put the obstructions there, let them take them away.

1652. Your company bought land with all these obstructions erected? The Illawarra railway was not constructed then, neither was the sewer across Cook's River.

1653. Has your property there never exceeded 450 acres? Well, it may be an acre or two more.

1654. And in the course of selling those few acres? We have never sold any of it.

1655. You intend to? Yes.

1656. And I think you will admit that the Illawarra line will be no drawback to your company in selling land? The Belmore railway will help us more than the Illawarra railway will.

1657. They will assist you to sell your land, will they not? Most certainly they will.

1658. That then, disposes, at once of the idea of the construction of these railways being a barrier in this case? I did not say the railways were a barrier, I said that the railway engineers made a mistake in the way they constructed the bridge over the river. I never mentioned the Belmore railway before, until this moment.

1659. Did you not say, when I said that you bought that property with all those obstructions, including the dams, "No, the Illawarra railway was not built then";—was not that your answer? The Illawarra railway was not built then.

1660. Then, the construction of that railway has been an accession to your property? I suppose it has.

1661.

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1661. Well, you and private individuals having bought property there whilst obstructions such as these dams existed, do you not think, if you want the removal of the dams, that it is fair that you should help the Government to remove them? So long as everybody is put on the same footing, I would not object. Treat the whole country the same.
1662. You think it is only fair, in carrying out a scheme like this, that if the Government are put to an expense of some thousands of pounds, those directly benefited by it should pay their proportionate share? With reference to the obstructions which the Government have put across the river, I think the Government should take them away at their own expense. With reference to any other improvements, of course, let the people of the whole county contribute to the expense, if you can devise an equitable scheme by which they can do it.
1663. Do you know the history of the building of the sugar-works dam? It was built for a fresh-water supply for the old Canterbury sugar-works.
1664. By the company? I believe that the gentleman who built it was the Hon. John Lucas, and that he can tell you all about it.
1665. Do you not think that under either scheme—whether the scheme that has been submitted to this Committee, or the proposal that you make—those people who own properties directly benefited should pay a proportionate share of the cost? Yes, certainly, if it is done under a betterment scheme. But you must prove that there is a betterment, and logically, of course, if there is any detriment, the State should pay for that.
1666. Do you not think that it would come under the betterment if you were to push your property in the market at the present time? We could not sell it at all now.
1667. But if, owing to the dredging of this river, it would sell straightaway, do you not think there would be a betterment? The proposed concrete dam below Undercliffe Bridge would prevent us from selling our property.
1668. Have you ever tried to sell it? No. We are surveying it now.
1669. *Mr. Hassall*] Did you become possessed of this land before or after this dam was erected across Cook's River? After.
1670. Therefore, the objection as to the river being blocked by that dam existed at the time you bought this land? Yes.
1671. *Mr. Roberts*.] Is the whole of your property in the Borough of Canterbury? Yes, all this estate.
1672. Are you aware of the views of the mayor and aldermen of Canterbury with regard to dealing with the nuisance at Cook's River? No; I cannot say that I am thoroughly aware of them. They are aware of the nuisance that existed in the river the summer before last, and that the fish died in the river through the muck that was impounded.
1673. You do not know whether they are in favour of the removal of the dam, and have an objection to the erection of any other dams across the river? I believe the Canterbury aldermen are in favour of restoring the river to its tidal condition.
1674. And, therefore, you coincide with them? I certainly do. I have always held that view.
1675. Do you advocate the removal of the sugar-house dam? Yes, most certainly.
1676. Every dam? I would remove every obstruction across the river.
1677. And you wish Cook's River to be restored to its natural state? Yes, deepened and dredged; and taken right up to the Liverpool Road—not to do it now, but to leave the possibility of its being done, and not to destroy it for the future.
1678. What are the principal reasons why you advocate that course being adopted? I think it will be better for all the dwellers along the banks of Cook's River. It will be healthier, and there will be a chance of Cook's River being made a navigable river. We might get blue metal by it up as far as Ashfield, Enfield, Strathfield, and other suburbs; in fact, you cannot say what Cook's River might become under intelligent management.
1679. Have you considered the possibility of a large area of land being flooded by the river being restored to its natural condition? I do not think that any very large area would be flooded.
1680. *Mr. Wright*.] About 109 acres of Marrickville Flats would be submerged, if the salt-water were let into Cook's River, and Cook's River were restored to its natural condition? But there would be the embankment at the mouth of Marrickville Flats.
1681. But that embankment would be an artificial embankment, which you protest against? No; I do not protest against stopping the water from going up Marrickville Valley. That embankment would not be an obstruction of the river.
1682. But a portion of Marrickville Flats was originally under water, and Marrickville people might say, "We want a tidal river as well as the people of Cook's River"? Yes; I suppose we are all pretty selfish.
1683. Can you give us a rough idea of what that 109 acres would be worth? I should have to figure it out on paper.
1684. You cannot give us an idea of the value of that land? No, I cannot.
1685. *Mr. Roberts*.] Do you think that the value of the whole of the property within the Borough of Canterbury would be largely increased if the Cook's River Dam were removed? Yes; I believe that the whole district would be much improved, and that if any damage did result the gain would be much greater than the loss.
1686. Not only the property you own? No, the whole district.
1687. *Mr. Farnell*.] Do you know when the land that is subject to flood-water was sold? It has been subdivided and sold, I should say, during the last twenty years. I mean at Cook's River and Marrickville.
1688. Do you know whether any has been sold during the last six or seven years? I am sure there have been attempts to sell, if sales have not been made.
1689. Have any estates, however small, been cut up within five or six years in the Marrickville Flats? I do not know that there have been any subdivisions, because you may say that it was all pretty well subdivided in the boom time.
1690. That was before 1888? Yes.
1691. I mentioned that because you asked that legislation should be passed to prevent people from building on such spots? Yes; certain areas should be declared as being unfit for habitation.

1692. Do you know that there is a Municipal Roads and Streets Bill—a measure I got passed in 1889—<sup>J. W. Watkin, Esq.</sup> which makes it incumbent on the local body to see that due regard is paid to sanitation, and that the roads are properly laid out and made before consent to the sale can be given? Well, it is a pity it is not observed then. <sup>14 July, 1896.</sup>

1693. If it is made compulsory on the municipal bodies, a plan should be submitted to them first? A most wise measure. I fancy that most of that land was subdivided prior to your legislation. What I want is a law fixing a minimum area for allotments, and stopping the crowding of buildings on small areas of land. That is one of the curses of the suburbs. I remember pointing that out when the Width of Roads Bill was being made law, and so my hands are clean.

Benjamin Lee, Esq., Director of the Sydney Permanent Freehold Land and Building Company (Limited), sworn, and examined:—

1694. *Mr. Trickett.*] You also are a director of the Sydney Permanent Freehold Land and Building Co. (Ltd.)? I am. <sup>B. Lee, Esq.</sup>

1695. You have heard the evidence of Mr. Watkin? I have. <sup>14 July, 1896.</sup>

1696. Do you, or do you not, agree with his views? In his evidence he has largely anticipated what I purposed saying; but there are some points which he has not touched upon, on broad general grounds, which I shall be desirous of dealing with in a short statement, after you have examined me.

1697. Will you make your statement now? I should prefer to make it after my examination.

1698. How long have your company held land affected by Cook's River? For some years. I cannot state definitely. I have not been a director more than four years.

1699. Were you a director when it was bought? No, I was not, or I never would have bought it.

1700. It was bought when the tide was shut out from Cook's River? It was bought when the river was in the state it is now in, so far as the upper dam is concerned, but much more open to navigation by boats than it is now. Every year it is getting worse in that respect.

1701. Every year it is getting more silted up? Yes.

1702. But part of the scheme of the Department is to dredge the river, and improve it in that way—will not that have a good effect? I think very little of an annual or periodical dredging of the river when you have to go through that process frequently. It is much better to prevent any silting up if you can.

1703. With regard to rivers that are surrounded by sloping lands, and large population, is it not inevitable that there must always be a considerable quantity of earthy stuff washed into the river? Unquestionably. That is the experience all over the Colony. As it becomes settled upon, so do the streams become lessened in their force.

1704. And become polluted? Not necessarily—only where the population becomes very dense. Then, in my opinion, that should be met by legislation compelling those people to put their sewage somewhere else, and not into what the Almighty intended to be for the use of all—a free, fresh, and open stream.

1705. That is all very well in theory, but cannot be carried out in practice; for although you may deal with sewage in that way, you cannot deal with surface water that comes over roads and manured fields, and make it go into one channel, and be removed away;—if it goes directly into a river, does it not necessarily cause it to be polluted? Yes, necessarily.

1706. Do I understand that your evidence is merely from an interested point of view, the same as that of the former witness, or do you take a broader view of the subject? I take a much broader view. I prefer to leave out altogether the personal view, for my own personal interest in it is not very large.

1707. That being so, I ask you do you understand the proposals the Government have submitted for the improvement of Cook's River? I am not an engineer, but I have carefully read all the proposals, and I do know from experience, and say advisedly, that money has been absolutely fooled away and wasted by the Government tinkering to relieve immediate wants, instead of looking a generation ahead. I can give you several instances of that.

1708. What I want to know is, if you understand the proposal that is before the Committee? I do understand this last one, and I think it is a most intolerable and abominable one.

1709. Before you come to that sweeping assertion, I would point out to you that there are two proposals—the one that was submitted by Mr. Darley in the first instance, and then the alternative scheme to build a tunnel and sewer to Shea's Creek—do you understand that? I do.

1710. Do your remarks apply to both those schemes? Yes.

1711. Will you tell us, first of all, your objections to the scheme to lower the sill at Cook's River Dam, to put up a dam near Wolli Creek, and to construct fascine banks, and so on? My objection is on the main ground that it is only a temporary expedient after all—that it will not be effective for the future, but highly detrimental to the multitude of people who must occupy that area, and that you should look forward to that period, and not to the present, and that by opening the river as a whole, even if you have to resort to dredging it, and compelling owners of property on its banks to contribute towards the expense, I say that that would be a much more preferable course than to prevent the ingress of salt-water, which is my main objection to that scheme.

1712. You say that the river should be made navigable from its entrance, and that people should be called upon to contribute towards the cost? I do. In the old country there is a net-work of railways, and yet the canals compete profitably for a certain class of traffic where speed is not necessary, and where the charge is low, and I say that above all other places with which nature has surrounded Sydney, Cook's River is the place for manufactories of a certain class, which require a water frontage to enable them to get their produce down to the port.

1713. Well, seeing that you take that view, have you considered this portion of the question, that this dam at Cook's River has been erected for about half a century, and that people have bought land which at the present time they use for pasturage purposes and for growing crops? I think you can say very little about the pasturage.

1714. I can only say what people have sworn here—and that is all that guides us—and the evidence being that if the salt-water is allowed to come in, one landholder will have 100 acres, now used for pastoral and agricultural purposes, submerged by salt-water;—what would you say to that state of affairs? I would say it is simply nonsense. I know enough of that river-bank all the way up, from going along it, to know that a fascine embankment made with a few ti-tree bushes, of which plenty could be got, if used now, would give you a rise sufficient to keep out most salt-water you could anticipate coming in, unless there were a tidal wave. <sup>1715.</sup>

B. Lee, Esq. 1715. You admit this proposition then, that the Government, if they let the salt water into Cook's River, should prevent that salt water from going over lands which are now used for pastoral and agricultural purposes? I admit that no man's private property should be ruined.

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1716. You say, "Let the tidal waters in," but will not something be required besides that;—is not the river at the present time overgrown with weeds;—is it not full of shoals, and holes, and so on? It is full of shoals, I admit.

1717. And deep places here and there—how would you deal with those;—we had evidence the other day that a lot of holes were filled up with slush, and were very objectionable, and how would you propose to deal with all these shallow places—I suppose they ought to be scooped out? My idea is that the river should be widened and extended.

1718. Dredged? Yes; instead of spending perhaps £1,000,000, which they will do on useless railways. They would have a cheap highway, then, and a clearance of the river.

1719. I presume that you are only giving an ordinary layman's opinion on this subject—you have not gone into it from an engineering point of view? I do not pretend to do that. I only wish to give you my experience, and for you to take it for what it is worth.

1720. How long have you known this river? Personally, I have known it, though not very intimately, for fifty years.

1721. But how long is it since you have taken sufficient interest in it to say whether its sanitary condition has improved or otherwise? From visits that I have made to the locality—and my visits have been pretty numerous of late years for various reasons—for the purpose of getting a bridge or two constructed across it, and in connection with depositions to the municipalities immediately concerned, and, as resulting therefrom, interviews with the Government, and so on—I am pretty intimately acquainted with the present position of affairs, and also with the state of the river during the last four years.

1722. And those observations have led you to see that it has gradually been becoming more and more polluted? There can be no question about that.

1723. Do you not think that has been the result of the increased population around rather than merely the effect of this dam being at the entrance? Well, everyone knows that the more a stream becomes lessened, so does its liability to silt up more quickly increase.

1724. Well, the Government proposal, and the proposal that comes from Mr. Darley, the Engineer-in-Chief, being to lower the sill of Cook's River Dam 2 feet, and thereby accelerate the outflow from the river and make it pure, what is your view of that? I say take it away altogether; it ought never to have been there.

1725. Do you think that lowering the sill 2 feet and making the rush of water much faster will improve the river? It must tend to improve it. It could not make it worse, but I contend that the dam should not be there at all. The one scheme is only an expedient, and the other in my opinion would be permanent.

1726. Then you do not think that Mr. Darley's scheme would be permanent? I do not. Only temporary—only for a few years.

1727. You have talked about experience of other places—have you ever been to Parramatta? I was not exactly born there, but I have spent fifty years of my life there.

1728. Did you ever notice any dams at the river there? I know that for very many years there was a rise and fall of tide several feet at the Lennox Bridge, and many times have we, as boys and young men, bathed in that river, and from the moment that it was allowed to silt up, and they constructed the artificial concrete culvert down the river with the object of expediting the sewerage, they ruined the properties abutting on the river—they ruined the freeholds which became almost valueless for years,—and the result was that, after spending £8,000 or £10,000 on that concrete viaduct or open sewer, it was ultimately torn up at a further cost of thousands of pounds, and then the Engineer-in-Chief devised a flood-gate, forsooth, lower down. That flood-gate made it ten times worse. It lets it out, but would let nothing in. That was found to be ineffectual, and now you know from reports that the state of that splendid town is almost ruinous to health owing to the increased sewage from the asylums and other places having no means of getting away.

1729. You base your arguments on the case at Parramatta? That is one. For many years steamers landed their passengers at the old asylum. Howell's dam was a little above that, and there was a mill. There was a full flow of the tide with a rise and fall of several feet up to Lennox Bridge and the upper dam at King's School which separated the salt from the fresh water. That has since been made wider, and turned into a permanent roadway, and I contend that if that river upwards had had the stones removed from it, and the river had been allowed to flow freely up and down, you would never had heard of the enormous expenditure of public money which has been wasted there and the public health endangered, as it is in a valuable town like Parramatta.

1730. The position you take up is: Leave things in a state of nature, and make no improvements at all? I do not say "Do nothing at all," but I say do not interfere with nature by tinkering and making things worse, and although I am not an engineer, I say that in my opinion, valueless though it may be, my firm conviction from experience and from what I have seen, is that this is a mere temporary expedient, and will not meet the wants even of Marrickville. If the people there live in a hole they must expect to have water there unless it is pumped out, and if you construct public works on streams made by nature they should certainly be comprehensive, and not merely for the present day. I know it is said that "sufficient for the day is the evil thereof," but that is not the view that should be taken in matters of this character. You should go much further, and if so you would find that it is a great saving in the end.

1731. Would you kindly tell us briefly what your remedy for the state of things at Cook's River would be? I know of no other remedy, except to leave it open, give it greater access, remove obstructions, and if necessary make it deeper by artificial means, and make the owners of the land contribute towards the expense. I think that is a fair and reasonable view to take.

1732. I understand that you also say that where the tide, if let in, would submerge lands that have been used for a number of years for agricultural or pastoral purposes, a fascine bank should be put up to prevent those lands from being submerged? Yes, most certainly.

1733. *Mr. Wright.*] A portion of Marrickville lies very low? I am aware of that.

1734. If we were to restore Cook's River to its normal condition, it would inundate a portion of Marrickville? If Cook's River were restored to its original state, it seems to me that Marrickville would be no worse than it was before it was a town.

1735.

1735. But what would be the position of the poor men who have purchased land in Marrickville and built houses upon it? It seems to be a complete reservoir—the receiver of water at certain times. There is no outfall for it, and therefore it must be pumped out. You cannot drain it. B. Lee, Esq.  
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1736. But if the river were allowed to run into it it would always be a waterhole; and it is a waterhole now after heavy rain, until it gets drained at times through natural drainage and evaporation; but if you allow the salt water to go into it, it will always be a waterhole, and if people have bought land there, and in some cases paid good prices for it, and built houses, how would you compensate them—out of the public exchequer? If my proposal would necessitate the river being a constant source of injury to private properties, I have already said that I am not in favour of private property being ruined by any public works.

1737. But you see those people would be ruined? That is merely a matter of opinion—it may be yours, it is not mine.

1738. But the evidence before us shows that 109 acres would practically be under water at high tide? They had no business to build there then.

1739. But they may have bought that land in ignorance as to its position when the tide was up, and how would you propose to deal with those unfortunate people? I suppose they would be like a good many others, and look upon it as a loss. They should not have bought marine villa sites so hastily.

1740. In view of the Government determining to open Cook's River by removing the dam, and letting the tidal water flow in, what would you do to recompense those people? I think their properties would be largely enhanced from the proceeds they would receive from works that must necessarily be established on the river.

1741. I do not think you grasp the question. Take the case of a working man who has bought a couple of allotments and built a cottage, and has no other interest in the neighbourhood—perhaps works miles away from his habitation—what compensation would it be to tell him that the neighbourhood of Cook's River had benefited by the tidal waters coming in, when at the same time the tidal waters were covering his land, and to say to him "You must recognise that the benefiting of other people in the district must fully compensate you"? But is it necessary that should be the result.

1742. It appears to me that it would be the result if you made Cook's River as it originally was? I do not at all think that it is absolutely necessary that such a thing should be the result.

1743. But if such were the result? It should be remedied as far as it could be. If you do an injury by any work, I think that injury should be remedied as far as it is possible to do so.

1744. But who would you propose should compensate those people—the Crown or the residents of Cook's River? I have already said that persons receiving benefit from the improvement of their property should bear a portion of the expense, and that, therefore, should necessarily come in as a reward to those who would be injured.

1745. If the river were dredged out, do you not think that with the existing population, and the possibility of a largely increased population, it would only be a question of time when the river would be silted up again by ordinary storm-waters? I do not think so.

1746. Storm-water brings down street-sweepings, and other things that are washed into the river, and soil is also washed into the river? We have an enormous population in Sydney, and that has not been so extensive as you seem to think.

1747. *Mr. Roberts.*] Your views in connection with this question are the same as those put forward by Mr. Watkin? Practically, with the exceptions I have stated from past experience of the result of artificial works, on the Parramatta River, for instance.

1748. I understood that Mr. Watkin was equally opposed to any dams being erected, or any other obstruction being built? I may say, at once, that it was the fact of my seeing this lower dam recommended which raised my indignation on general grounds.

1749. Do you mean Undercliffe Bridge dam, or the dam across Wolli Creek? Principally, the Undercliffe dam.

1750. But are you aware that in the alternative scheme submitted to the Committee no erection of a dam at Undercliffe Bridge is contemplated, so that that would get rid of one of your objections to the scheme,—which simply contemplates lowering the sills at Cook's River Dam, and clearing out Wolli Creek and Cook's River by dredging; but you would rather see all obstructions removed, and Cook's River restored to its natural state? That is my view.

1751. Are you speaking merely as one having property there, or as to what you consider would be for the benefit of the whole of the district? For the benefit of those who come after us, during the next fifty years.

1752. *Mr. O'Connor.*] Do you know this place very well? Yes.

1753. Have you considered the main Departmental scheme of the Engineer-in-Chief—Mr. Darley? It is that which brought me here, and raised my indignation.

1754. You disapprove of that? Entirely; on general public grounds, for the future of the health of the persons who are to come after us; because of the obstruction of the natural stream—inevitably so, as exemplified by experience.

1755. Where do you live? At Annandale.

1756. But you know this place well? Yes. I have been over it frequently during the last four years, on deputations connected with bridges, and being a director of the company has also led me to go there.

1757. The future welfare of that large property in which you are interested depends on this scheme being properly carried out? It depends to this extent; that the property must be largely depreciated if the river were closed. That is inevitable, as it would damage any property.

1758. You are distinctly of opinion that if this scheme were carried out, it would materially damage the property belonging to the company of which you are one of the directors? That is not the view with which I have given my evidence.

1759. No, but that is your opinion? Yes.

1760. I take your evidence to be given on high grounds? That is my object entirely.

1761. *Chairman.*] Do you wish to add anything to what you have already said? There is one further illustration to which I wish to draw your attention. I have spent a large portion of my life on the Hunter River, where also a considerable amount of Government money has been fooled away. Wallis Creek is a tributary of the Hunter River, and within my recollection large sized vessels could go miles up to a place called Yarrabong. They used to deliver their cargoes and take in other cargoes, and then go down the

B. Lee, Esq.  
14 July, 1896. Hunter River to Newcastle. That was closed by a flood-gate at what is now known as Victoria Bridge. That flood-gate, in addition to being washed away once or twice, and being rebuilt at an enormous cost, effectually succeeded in destroying the whole of that stream which was previously navigable for miles, and it has become a filthy ditch, destructive of health, and within the last few years the Minister for Public Works has contributed a large sum of money to people there, to clear out the ditch, the navigation of which ought never to have been stopped.

1762. *Mr. O'Connor.*] You are of opinion that if that had never been interfered with that large expenditure would have been unnecessary? Utterly so.

1763. And they would be better off? Far better off. Then look at all the injury that has arisen from the artificial works constructed on the Hunter River. They want now to go on to private property on the other side, and to take away people's property that has been improved—reclaimed as it were by the artificial works made in the township. What used to be a running stream past a man's door became a sandbank and grass-paddock where he feeds his cows; and now they have the audacity to demand that that shall be taken from him, because they say that it throws water on works they have constructed on the other side. I do not think that impudence could go any further, and that is after spending enormous sums of money. All this goes to exemplify what I have already stated, namely the folly of interfering with natural water-courses, unless it is to give facilities for the water to get away more quickly.

WEDNESDAY, 15 JULY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHREY.  
The Hon. CHARLES JAMES ROBERTS, C.M.G.  
The Hon. WILLIAM JOSEPH TRICKETT.  
The Hon. DANIEL O'CONNOR.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
THOMAS HENRY HASSALL, Esq.  
FRANCIS AUGUSTUS WRIGHT, Esq.  
FRANK FARNELL, Esq.

The Committee further considered the proposed Improvement of Cook's River.

James Phillip Webster, Esq., A.M.I.C.E., Engineer and Overseer to the Borough of Marrickville, sworn, and further examined:—

J. P. Webster, Esq., A.M.I.C.E.  
15 July, 1896. 1764. *Chairman.*] Does the flood affect the lower side of the dam at Cook's River, and how high may it reach above high water? I have personally inspected Cook's River at the eastern side of the dam, also at the entrance to Shea's Creek, have taken levels, and am now in a position to verify my statement that there is no difference in level of water to be of any practical value.

1765. In other words, the flood-level will be as high on the seaward side of Cook's River Dam as it is at Shea's Creek, and, therefore, you can go up the estuary of Cook's River to where it is intercepted by the dam and get as good a discharge head as you can into Shea's Creek? That is so.

1766. The discharge-level will be the same? The ordinary high-water mark is the same. I will now deal with the flood-level. In flood the water rises at the entrance to Shea's Creek similarly to what it does at the eastern side of the dam. The greatest difference during the late heavy gales was 2½ inches, which I consider of no practical value. I found the flood-marks at both places, which I make 10 inches over ordinary high-water mark.

1767. So not only the high-water mark at the eastern side of the dam is on a level with that at the junction of Shea's Creek and Cook's River, but the flood-mark is the same also; therefore, whether it be affected by the tide or affected by the flood, the discharge at either place would be at the same level? Quite so.

1768. How far is it from Cook's River Dam to the mouth of Marrickville Flats? Half a mile, roughly.

1769. Have you taken the levels from the dam to the mouth of Marrickville Flats? Yes, I have.

1770. Between the dam and the entrance to Marrickville Flats there is a contraction of the river-banks? I do not admit that there is a contraction of the river-banks. There is a decrease in the size of the river, but then the drainage area decreases also.

1771. Can you give us any reliable information as to the difference between water-level opposite the mouth of Marrickville Flats and at the upper side of the dam? It is the same.

1772. Are we then justified in inferring that if the dam were removed, the high tide would be practically level from the mouth of Shea's Creek to the mouth of Marrickville Creek? Yes, you are, provided that a sufficient channel is left for the flood-waters or discharge of the drainage area of Cook's River.

1773. I was talking of high-tide floods. In flood-time what would be the difference in flood-level, supposing there were no impediment at the dam between the mouth of Marrickville Flats, in Cook's River, and the junction of Shea's Creek and Cook's River? None of any value.

1774. Therefore, in your opinion, the alternative scheme has been based upon a wrong contention? Yes.

1775. What, then, is the value of the alternative scheme? It is of no value whatever.

1776. If you rob it of the fall, can you urge anything else in favour of it? Nothing in favour of it, but a great deal against it.

1777. Will you again state what are your objections to the alternative scheme? My great objection to the alternative scheme is that it does not give a better outfall than the natural outlet at the mouth of Marrickville Valley. Another objection to it is that it is an artificial channel and is covered in, and has a fall that will not render it self-cleansing. The third objection is that the channel is too small to carry off the waters in a sufficient time to be of any benefit to the district.

1778. You have made a calculation? Yes.

1779. And you maintain that your calculation was correct? I do.

1780. *Mr. Lee.*] Then, if it were not sufficient to carry off the water from that flat, and if a dam were made at the mouth of the Marrickville Valley, the inundation of the buildings would continue? Yes, it would for a longer period than it does at present, and even longer if the river were widened and cleared and the natural outlet at the mouth of the valley were opened out.

1781. *Chairman.*] What do you consider would be a reasonable discharging area for Cook's River at the dam—what length of sluice-gate? 300 feet.

1782. The Departmental proposal is to reclaim by means of a fascine bank, and thereby contracting the present bed of Cook's River between the dam and the railway bridge; below the railway bridge in the present dam, there is what you may call a very fair receiving area that would aid in relieving the floods—a sort of collecting area;—is it a wise thing to contract that? Not at the present time, and looking at it from an economical point of view, it is not.

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Esq.,  
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1783. Better clean it out? It would be better to clean it out, owing to the fact that reclaiming would be a costly work to carry out, and if it were carried out the value of the land, judging from the surroundings, would be low. I do not think it would amount to anything that would justify the expense.

1784. It might be some advantage also as a sort of receiving area for the water from Wollie Creek and Cook's River when the tide was rising? Yes, that is so. It would increase the impounding capacity above the dam, which is of some importance, and another thing that it would do is that it would leave a considerable extent of sluice-gates to be used, which, if it were filled up, would have to be closed and necessitate new ones being constructed on the southern side.

1785. You mean preserve the sluice-gates on the northern side to do as much as they can? Yes, as much as possible, thereby saving the cost of constructing new gates on the southern side.

1786. And you believe that it would be wiser to take the storm-water discharge down the drainage centre? Yes, the natural discharge.

1787. You understand, of course, that that will not do much more than alleviate the trouble—drain the flat quickly when the flood-waters come there, but will not prevent floods absolutely? It will not prevent floods absolutely, as I explained in my former evidence.

1788. It is, you think, the best you can do without pumping? Yes, and intercepting the high-level waters.

1789. *Mr. Lee.*] But neither of the present proposals would entirely relieve Marrickville? No. The only possible way to relieve Marrickville properly is by pumping.

1790. *Chairman.*] And by intercepting? Yes. By intercepting the waters from as large an area as possible and pumping a minimum quantity—that is, reducing the low-level area and making it of the least possible extent. The low-level area is comparatively a small area.

1791. *Mr. Lee.*] By pumping from where? The whole of the area would have to be pumped from the inside of the proposed dam.

1792. To throw the water over it into the river? Yes.

1793. And by a proper system of drainage the water could be brought down to that point from the low levels? The water from the whole of Marrickville, excepting some 400 acres on the west, which drains directly into Cook's River, gravitates to that point.

1794. You have had, I suppose, to consider a number of times this question of dealing with the accumulated waters at Marrickville? Ever since I have been in Marrickville it has been brought prominently before me, and I have taken a very great interest in dealing with the storm-waters.

1795. But you found it a difficult problem to deal with? Well, as a drainage problem, it is not a difficult one. It is a matter of expense.

1796. But as drainage by gravitation, it has been a very difficult matter? Yes; that is, allowing the whole of the waters to gravitate on to the flat.

1797. You have taken the precaution to satisfy yourself that if the alternative scheme were carried out it would be of no earthly use? I am positive of that.

1798. Therefore, after studying this question from every point of view, you have had to come to the conclusion that the only way to relieve Marrickville would be by putting a dam across the mouth of the valley to prevent the inflow of flood and tidal waters, and to erect sluice-gates sufficient to take away as much flood-water as the tide would permit, and to pump the balance? The main point is the lowering of the water-level at this side, so as to obtain the maximum fall.

1799. That is another point altogether; first of all you must prevent the inflow of water? Quite so.

1800. That would necessitate a dam there? Yes.

1801. And that, I presume, would deal with both flood and tidal waters? Yes.

1802. And once having prevented that, the question is how are you going to get out from inside the dam water which might be termed surface water? The only way to do that is to let it out at low tide, taking advantage of the falling tide to let it out.

1803. So there would not be a discharge for this in flood-time, if the surface water were to accumulate on Marrickville Flats and Cook's River were in flood, and therefore the discharging power at that particular time would be practically nil? It would be very small indeed.

1804. Do you think that flooding by surface water would last only for a short time? Yes.

1805. But still that short time would be quite sufficient for the inundation of those buildings in the low-lying places? I quite realise the fact that a scheme such as the one under consideration would minimise the liability to flooding.

1806. But still, even if that is carried out, some of those buildings would still be inundated? During excessive storms.

1807. So the Committee are to consider that no matter what scheme may be carried out, or even if your proposal be carried out, there will still be an accumulation of water about Marrickville, but not so much as there would be under present circumstances? Yes.

1808. And nothing will remove that speedily except pumping? That is so.

1809. *Mr. Humphery.*] In reply to Mr. Lee, you spoke of the difficulty of a gravitation scheme; what you really mean is that a gravitation scheme is impracticable, do you not? A gravitation scheme to relieve Marrickville Flats at all times from being flooded is impracticable.

1810. Nothing but a pumping scheme would be effective? Nothing but a pumping scheme, and the intercepting of the high-level waters.

1811. So, as a matter of fact, both the original scheme and the alternative scheme, in your opinion, would not free Marrickville wholly from water lying during flood-time on the lower part? It would not completely.

1812. On that point you are quite clear, are you? Yes.

1813. In your opinion will it be necessary to make any alterations whatever in connection with the railway embankment and the opening in it in carrying out the proposal for drainage? None whatever.

1814. That is your opinion, notwithstanding anything that may have been said to the contrary by other witnesses who have been examined? Quite so.

- J. P. Webster,  
Esq.,  
A.M.I.C.E.  
15 July, 1896.
1815. *Mr. Hassall.*] Would a pumping-plant erected at the earthwork dam at the end of the Marrickville Valley to keep out the water of Cook's River be more beneficial as a scheme for draining the valley than the alternative scheme proposed by Mr. Darley? To pump the whole of the 1,700 acres of the Marrickville watershed would be a work that I would not advise should be undertaken.
1816. Would the natural drainage of the valley gravitate to that earth dam put across to prevent the water of Cook's River flowing up the river? It would come to that dam.
1817. So that if a pumping-plant were erected there it would be better in that position than it would be at the point indicated in Mr. Darley's scheme? Undoubtedly.
1818. And it would save the expense of the construction of that channel? Yes; because the drainage of 180 acres would in that case have to be made to gravitate northerly.
1819. You would have to make provisions to drain the water back to that point? You would have to do that by artificial means.
1820. Whereas the natural drainage would go to the earthwork dam? Yes, that is the natural outfall.
1821. And surface water might be pumped from there into the river? Quite so.
1822. *Chairman.*] The water coming into Marrickville Flats comes from various municipalities, and if a discharge for flood-waters be constructed along Marrickville Flats, ought the expense of that to be a charge upon the whole catchment area? Decidedly so.
1823. Not upon Marrickville alone? No; because a considerable area of Newtown must for all time drain through Marrickville, and I should say, roughly speaking, that half of the Municipality of St. Peters also drains through.
1824. And for such a storm-water discharge those boroughs should be treated in the same way as the Government treat other municipalities with regard to their storm-water discharges? In my opinion they should be treated on precisely the same lines as the Borough of Marrickville should be treated. The only difference is that Marrickville has a larger area gravitating to Cook's River than the other boroughs have. It is only a difference in the area—no difference in the principle.
1825. It is a difference of detail, not a matter of principle? Not a matter of principle—only a difference in the area.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

Improvement of Cook's River.

APPENDIX.

A.

[To Evidence of C. W. Darley, Esq.]

MR. CAMPBELL'S COMPLAINT REGARDING THE CREEK RUNNING THROUGH MARRICKVILLE VALLEY.

1 February, 1888.

I VISITED this locality in company with Mr. Campbell on 19th January. I visited it again in company with Mr. Stayton (by arrangement with the Commissioner for Roads and Bridges) this morning.

The creek referred to is the natural course for storm-waters from a large area in the three municipalities mentioned by Mr. Campbell; and in addition it carries a considerable quantity of sewage. Its course is much obstructed by growths, as well as in other ways; and towards its mouth where it falls into Cook's River above the dam, it divides into several channels, all of which are overgrown and inefficient. In its course there are two or three rather extensive swamps. The level of much of the valley is at or scarcely above high-water level; that of the river is usually 2 or 3 feet below high-water level, but in heavy rains rises to a foot or more above high-water, and then the valley is flooded, and, as Mr. Campbell points out, much of the sewage spreads over the flats. Thus nothing that can be done in the way of clearing and widening the natural channel will do anything towards preventing floods; and the works which of this kind are now being done by the Marrickville Council, consisting in cutting the creek to a uniform width of 14 feet and slightly deepening it, will aggravate any nuisance at present caused by sewage. The section ordered will ensure the arrest of solid matters and stagnation of the flow, which will be the more offensive in that it is to be spread out over a wide surface; and the work is being begun at the wrong end, in as far as the outfall is choked and nearly useless. In point of fact ratepayers' money is here being thrown away; and the example shows how necessary it is that such works should not be allowed to be begun until they have been submitted to and approved by a competent Board. As to the passage of sewage down this channel, nothing can be done to prevent it until the sewerage of the suburbs is done. It is very undesirable, as Mr. Campbell points out, that it should enter the river above the dam; but this cannot be helped. All that can be done at present is to ensure its falling into the river, and to prevent its being backed up along with flood-waters and spread over the lowest parts of the valley.

In the Report on the Sewerage of the Western Suburbs which has just been completed by Mr. Stayton, under the direction of the Commissioner for Roads and Bridges, and recently presented by the latter to the Minister for Works is a special section devoted to the prevention of floods in this valley. This Mr. Stayton proposes to do by widening and embanking the creek, and raising the level of the lowest land from 2 feet at the river end to 4 feet at Premier-street. In addition, and as a part of the sewerage scheme, the sewage now complained of is intended to be brought (along with much besides) to a spot near the mouth of this creek, where it will be raised sufficiently to gravitate to Webb's Grant. None but some such plan as this will remedy the matter complained of. Perhaps the Commissioner would forward to you a copy of the section in the report referred to, for the Board's further information, in which the matter is very clearly explained.

The President, Board of Health.

J. ASHBURTON THOMPSON, M.D.,  
Chief Medical Inspector.

A 1.

REPORT BY MR. G. H. STAYTON UPON MARRICKVILLE DRAINAGE.

Condition of Creek.

Department of Public Works, Sewerage Branch, Sydney, 19 July, 1888.

THE question referred to in the letter from Mr. G. H. Smith and others, dated the 10th instant, and from Mr. Curruthers, M.P., of yesterday's date, has received attention. The locality was viewed yesterday by the Engineer-in-Chief, accompanied by Mr. Alderman Graham and myself, and we inspected the creek or watercourse from Edgeware Road to Cook's River. The condition of the creek between Renwick-street and Cook's River is extremely foul, and from the abominable stenches which are given off by the putrid filth which has been allowed to accumulate, it cannot be regarded otherwise than as highly dangerous to public health.

In reply to the Minister's query "whether the case is as bad as represented," I do not hesitate to affirm that it is. It may also be stated that whilst the proposed sewerage scheme for the western suburbs would provide a permanent remedy, the present state of things is so bad that immediate action is necessary for the protection of the health of the inhabitants of the locality, and of those persons who pass over the creek to and from the railway station at Tempe.

To deal with the existing dry weather flow in order to temporarily relieve the nuisance forthwith, the following proposals may be considered, viz. :-

1. To open the tidal flaps at Cook's River Dam and allow the tide to flow in. This could be done occasionally, but always under inspection, so that overflows might be prevented at high-water. It is obvious that the addition of a large quantity of water would sweeten the condition of the creek, and, provided the obstruction in the bed of the creek near Premier-street bridge were removed to a depth of 18 inches, the foul water could be drawn off at low tide. The filth would thus be so diluted as to be almost inoffensive in the river. It would, of course, be necessary to remove the rushes and other obstructions from the water-way, and the operations would no doubt necessitate the use of fire and disinfectants to minimise the stench created by disturbing the mud. The low places at the sides of the creek where the filth now overflows (e.g.) near Premier-street bridge, should be at once filled in with earth to the level of the adjacent banks.
2. To remove the obstructions from the water-course near Premier-street, and to flush the creek south of Edgeware Road with the greatest available supply of water from the nearest mains, at least once a week during the existing dry weather.
3. To construct a pipe drain from below Premier-street, so as to discharge below Cook's River Dam—a distance of 2,600 feet. The levels of the creek are such, however, that it could not be effectually drained during dry seasons, even at low water; but apart from this the works would be costly to execute, and would take a considerable time to construct.

4. The abolition of Cook's River Dam, or rather the entire removal of the tidal flaps, and the construction of a dam or weir above the creek outlet, would enable the creek to be drained permanently into a tidal way. This scheme would necessitate considerable embanking and reclamation works at the broadwater part of the river between the Illawarra railway and the existing dam, so as to reduce the width of the water to a proper channel. The reclaimed areas might be utilised as recreative reserves or otherwise.

On the whole, I am of opinion that it would be the most expeditious plan to remove the beforementioned obstructions from the water-course, and to open the flaps at ebb-tide; at the same time giving the whole creek a copious flushing as described on the foregoing page. The tidal waters could then be admitted to the required level. These operations would only be necessary during extremely dry seasons.

GEO. H. STAYTON,

Assistant Engineer for Suburban Sewerage.

## A 2.

### REPORT ON DRAINAGE AND PREVENTION OF FLOODS AT MARRICKVILLE VALLEY.

Sewerage Branch, Sydney, 2 April, 1890.

I HAVE perused Mr. Price's report and examined the plan and sections which he has attached; I have also visited and carefully examined Cook's River Dam, Cook's River from the Dam to the low-lying land, and the Marrickville Valley.

There can be no doubt that something should be done to carry away the stormwater off the Marrickville watershed, and prevent the flooding of the low-lying land on the Marrickville flats, but it is certainly a difficult matter to design such a scheme as will be both effectual and economical.

Mr. Price states that the flood-level of May 1889, at the Cook's River Dam was 5 ft. 5 in. above high-water mark, and as this appears to be the worst flood on record, a scheme that would carry away such a flood might be considered effectual.

Before any plan can be devised for effectually preventing this low-lying ground from being flooded, it will be necessary to ascertain the several causes that brought about such a high flood-level in 1889.

It would appear from the information given by Mr. Price in his report and sections, that the causes were as follows, viz:—

1. The chief reason was the phenomenal rainfall.
2. The flow of the river was obstructed by the sandbank at the railway bridge to the extent of 1 foot.
3. The level of the river was 2 feet higher on the inside of the Cook's River Dam than on the outside, showing clearly, as Mr. Price points out, that there was a second obstruction at the dam to the extent of 2 feet. It would therefore follow that if there had been no obstruction at the railway bridge, and the Cook's River Dam had been provided with sufficient openings or sluices, the flood-level at the Marrickville flats would have been 3 feet lower than was the case in 1889.

	Above H.W.M.
Flood level of Marrickville Valley, May, 1889 .....	5' 5"
Deduct for obstructions that existed in May, 1889 .....	3' 0"
Then flood-level of May, 1889, would have been .....	2' 5"

Mr. Price, in his scheme, provides for removing the obstruction at the railway bridge, and by this means the flood-level at Premier-street is reduced to 4.5 above high-water mark. There does not appear to be any reason why the 2-ft. obstruction at the Cook's River Dam should not be similarly removed by inserting suitable sluices in the dam, and thus further reduce the flood-level at Premier-street to 2.5 above high-water mark.

Assuming that the river was deepened, and an adequate water-way provided at the dam, the large provision which Mr. Price proposes would not be necessary, and something less expensive might be substituted.

Mr. Price has designed the channels capable of discharging 2 inches of rainfall per hour, where, it has been found from experience in Sydney and suburbs, in the construction of storm-water channels under similar conditions, that 1 inch of rainfall per hour to flow off at once, is a liberal allowance to make, although more than this amount of rain may fall in an hour, the water does not all reach the channel at a faster rate than 1 inch per hour. Mr. Stayton has provided for  $\frac{3}{4}$  of an inch to run off at once, and I am of opinion that this is sufficient. It would therefore appear that the channels in question, supposing that it was desirable to construct three channels in the positions given, would only require to be half the capacity proposed.

When only sufficient rain falls to cause a small flow in the channels, and the water from any cause becomes stagnant, I have no doubt that three channels of such great widths would be found to be a serious nuisance.

After carefully considering Mr. Price's scheme, and comparing it with Mr. Stayton's proposal contained on page 26 of his Report on the Sewerage of the Western Suburbs, I have come to the conclusion that the channel suggested by Mr. Stayton is the best and cheapest method to deal with the difficulty, and would render Marrickville Valley free from floods, provided:—

1. That instead of the top level of the channel where it joins Cook's River being 2 feet above high-water mark it be 3 feet, and the top-level of the channel at Sydenham Road, 5 feet above high-water mark instead of 4 feet.
2. That Cook's River be deepened between the point where the channel joins the river and the dam.
3. That an adequate water-way be provided in the dam to allow the river to flow without interruption at that place.

By referring to page 2 of this report with diagram attached, it will be seen that by making the level of the channel proposed by Mr. Stayton, 3 feet above high-water mark at the point where it joins the river, even under such a combination of adverse circumstances as occurred in May last, the flood-level would be 6 inches below the top of the channel at that point, and 2½ feet below the top of the channel at Sydenham Road.

It would be necessary to convey into this channel the storm-water from the highlands: this might be done by laying pipes or constructing gullies, &c., at the intersection of the several streets and roads. Until the land was filled in, as proposed by Mr. Stayton, the ground below the level of the channel on the north side of the valley, would be drained by the present wrought-iron fluming. A small channel might be excavated for the same purpose on the south side of the channel. The cost of constructing the proposed channel, deepening the bed of the river, &c., would be, viz:—

Excavation for channel, &c..... cubic yards	17,766	3/-	£2,664 18 0
Filling into embankments..... cubic yards	13,732	2/-	1,373 4 0
Sandstone concrete in channel bottom..... cubic yards	9,522	34/6	16,425 9 0
Turfing slopes of embankments..... square yards	18,951	1/6	1,421 6 6
Raising road levels.....			5,000 0 0
Four wooden bridges.....			960 0 0
Deepening the river at the railway bridge.....			1,000 0 0
Total estimated cost.....			£28,844 17 6

This is £8,844 17s. 6d. above Mr. Stayton's original estimate, and is caused—

1. Chiefly through providing a concrete bottom for the whole width of the channel, as per cross-section annexed, instead of a narrow strip only along centre line of channel. The concrete bottom for the whole width of the channel will carry the dry weather flow better, and will be more easy clearing, and prevent silting up and scouring.
2. Deepening the river at railway bridge.
3. Construction of four wooden bridges.

Compared with Mr. Price's scheme, Mr. Stayton's proposals would have the following advantages, viz:—

1. The area of land that would have to be resumed would be reduced from 220 to 176 acres.
2. No houses would have to be taken down.
3. No alteration to sewerage scheme for western suburbs.
4. No charge for maintenance, fuel, and general working expenses of pumps.
5. The position of no street would be altered—as in the case of Meeks-street, see Mr. Price's plan.
6. In order to raise the valley above flood-level as proposed by Mr. Stayton (exclusive of centre channel) other filling of 1,264,000 cubic yards, @ 2/6 £158,000 would be reduced to 725,227 cubic yards, @ 2/6 £90,653 7s. 6d.

But

But I consider it inevitable that this valley should be filled up, in order to put it into a good sanitary condition, and make the land available for building and recreation purposes.

Mr. Price's scheme would cost in all about £153,000, and £51,317 = £209,317. Mr. Stayton's scheme would cost in all about £90,653 7s. 6d., and £28,344 15s. 6d. = £119,498 3s. 6d., or £90,318 17s. less than Mr. Price's scheme.

7. As pointed out previously, these high level drains of such a great width would no doubt work well when there was sufficient water to cause a good flow, but on the other hand, supposing the rainfall to be small, and this small amount of water to carry with it a quantity of sewage matter off the streets and land into the channel, then the great area of channel would be a serious inconvenience and cause much nuisance. Whereas the channel proposed by Mr. Stayton would be only 53 feet wide at bottom, and have a concrete bottom which could be easily cleaned.

I attach a diagram on which are shown the proposed channel, the flood-level of May, 1889, and what the flood-level would be in future under similar circumstances if the works proposed in this report were carried out.

C. H. OILFSEN BAGGE.

### A 3.

#### MARRICKVILLE FLOODS.

Department of Public Works, Harbours and Rivers Branch, 19 April, 1890.

I beg to report that the class of work required to remedy the floods which cause so much trouble in this district is of no exceptional character.

There are in many countries large populations living on land similarly situated as to their relative levels to the tidal waters. It is well known that many are dependent on their dykes, which prevent the sea at high tides from flooding their country.

The chief difficulty in this Marrickville district is the great expenditure necessary to resume all the properties that are subject to these floods.

If this land were Government property and clear of buildings, sea-tanks and flood-gates could be constructed, and intercepting drains made, that would discharge above the tides. A central channel could be cut and turned into an ornamental lake, and the low grounds used for park purposes.

But I will conclude that it is not practicable for this land to be resumed by the Government, or that any interference should be made with the buildings on this land, and that the works that I have to suggest for your consideration are those that will at a reasonable cost give the greatest amount of relief to the high floods that interfere very seriously with so much public property.

The first work is the continuation of the dredging operations from Cook's River Dam to Botany Bay.

This work is authorised, and although only partially carried out, has already had the satisfactory effect of causing the levels of the tides at low water to be 2 feet lower at the dam than they were previous to the starting of these works.

The late Commissioner for Roads was aware of this fact, and acknowledged the great importance this would have in the drainage of this district.

The continuation then of this dredging becomes of the first importance, for the deepening of this wide channel that is now aligned with fascine banks will not only make it navigable, and of great value for commercial purposes, but it will also pass the flood-waters off much more rapidly.

The fact that this work in the lower river has already given an increase of fall at low water of 2 feet at the dam, and that this can still be increased by further dredging, suggests the second work that I propose should be carried out.

This is the lowering of the sills of the flood-gates in the dam these 2 feet. And inasmuch as the flood-waters are greatly impeded at present by the insufficient area of the flood-gates, the sills should not only be lowered, but ten additional flood-gates should be built, to hang loose with links from a higher frame, so that the flood-waters may have a perfectly free vent between the rise and fall of the tides. At present there is always a fall of from 2 to 3 feet through these gates at flood-time.

In the highest flood on record, last May, when twenty inches of rain fell in four days, the fall at high-water at this dam was at least 2 feet.

Mr. Price states in his carefully-studied report, that as the river level below the dam is raised by the tides and flood-waters 2½ feet above high-water, no system of sluices, or even clearing away the dam altogether, would protect the inundation of all lands less than 3 feet above high-water. This rise in the river only occurred once in twenty years, and that was the last May flood, and I am satisfied that if the river channel had been dredged to a uniform depth of 10 feet, low-water, and the sills of the gates lowered the required 2 feet, together with the additional flood-gates that I now refer to, this flood-water would not have accumulated in the river to anything like the same extent; and although very exceptional floods may occur once in twenty years, even then a much smaller area of land would be flooded, and such a flood would, when these works are completed, pass from off the land in much less time. In fact the water would nearly pass off with each tide.

The chief advantage of these new works would be the total relief from all ordinary floods that so often occur with only a moderate rainfall.

The works of dredging the lower river and increasing the number of flood-gates in the dam must also be supplemented by the third and last work that I can suggest as being practicable: that is, the deepening and widening of the river channel above the dam, as shown within the strong red lines on the accompanying plan. At present this channel is full of mud, and as the drainage of this district enters this pound, it is most necessary to have it dredged out, even on sanitary grounds.

The banks should be aligned with fascine work, and a small area of the now useless swamp land should be resumed, and the whole brought above flood level, the increased value of which would in a great measure recoup the expenditure.

Cook's River is the drain of the district; it is under the jurisdiction of the Government. At present the bed of the river is full of mud, and it is a legitimate and necessary work to clear this channel, and adjust the flood-gates, and continue the deepening of the lower channel, so that this river may be made of the greatest benefit to the people, and at the same time every possible obstruction to the free flow of the flood-waters removed.

I estimate the work of the flood-gates at £6,000, and dredging and aligning the river above the dam £8,000 = £14,000.

ALFRED WILLIAMS,

Assistant Engineer, Harbours and Rivers Department.

### A 4.

#### LOW-LYING GROUND, MARRICKVILLE.

Roads and Bridges Branch, Sydney, 25 April, 1890.

THIS place has been so fully described at various times that it is unnecessary for me to dwell on this part of the subject, suffice it to say these swamps cannot be other than a great nuisance, and injurious to the health of the surrounding population, more particularly to those who may have settled upon it.

The steps necessary to be taken to remedy this state of affairs must be considered from two points of view, engineering and commercial.

With regard to the former, there is no great difficulty in dealing with it, it is a matter of money; given *carte blanche* as to funds the engineering difficulties melt away.

The commercial aspect is, however, a much more difficult matter to deal with, and before my scheme is decided upon, I think this part of the question should be very carefully gone into by the Government Valuator.

At first sight it would seem that the proper thing to do would be to lower Cook's River Dam, and clean out the river, probably confining it within banks as has been done in the lower part of the river, but from a perusal of Mr. Price's report, it would appear that this would be of little use, as, during the late heavy rains the level of the water below the dam was actually raised to such a height as to cover a considerable portion of the swamp.

It may be said that this happened during exceptional weather; this no doubt is true, but it may and most likely will, occur again, and as the usefulness of a chain must be measured by its weakest link, the useful effect of this scheme must

must be looked upon in the same light. I do not think any scheme is worth considering which does not provide for the complete reclamation of the swamp, and for that reason I am of opinion there are only four ways which present themselves for remedying this very unsatisfactory state of affairs:—

1. Simply making a drain through the centre of the swamp.
2. Making this drain and filling up the swamp to high-water mark.
3. Making an embankment along Cook's River, catch-water drains around the swamp, and filling up to high-water mark.
4. Filling up to above flood-level and providing suitable drains.

The cost of these schemes I estimate roughly as follows:—1. £11,000; 2. £42,000; 3. £52,000; 4. £140,000.

The first scheme has nothing to recommend it; in fact, it is hardly worth being considered. It would perhaps make the swamp a little less unsanitary than it is at present, in that it would collect a great part of the drainage (that finds its way through the swamp to the creek), into one channel with a smooth surface and consequent ready get-away, but it would leave the swamp still liable to being flooded and practically useless.

No. 2 scheme is decidedly better, but as it would not make the place of any more commercial value than at present, I could not recommend the expenditure of £42,000; it could not be used for anything but a recreation ground, and even for that would not be desirable. The choice lies, therefore, between Nos. 3 and 4 schemes.

No. 3 has much to commend it; it would effectually drain the swamp, make it sanitary, and that for the comparatively moderate sum of £52,000. I am not sure, however, if it would increase to any great extent the commercial value of the place. To some extent it no doubt would; but I question very much if it would be desirable to allow houses being erected on that portion which would be raised to high-water mark; they would of necessity be damp and unhealthy.

No. 4 scheme is, of course, the complete one; but I fear the estimate, £140,000, puts it out of the running.

I think the proper course now to adopt is to submit schemes Nos. 3 and 4 to the Government Valuator for a report on the commercial aspect. If by any possible means of purchasing and re-selling this land a fair remuneration could be obtained for the larger outlay, there can, I think, be no doubt but that it would be the proper one to adopt. If not (which I think is very probable), I would recommend scheme No. 3.

I dare say for the increased value to the surrounding properties, some return might be obtained for this expenditure.

If either of these schemes were carried out, the nuisance which is said to exist in Cook's River would, to a very great extent, be done away with.

The Under Secretary, Department of Public Works.

ROBERT HICKSON.

### B.

[To Evidence of J. M. Smail, Esq.]

#### INTERCEPTION OF STORM-WATERS AT MARRICKVILLE.

Parliamentary Standing Committee on Public Works, Public Works Buildings, Phillip-street.

Sir,

I have the honor, by direction of the Chairman, to request you to be good enough to inform him if the storm-waters will eventually seek Marrickville Flat as a discharge, or whether they will be intercepted on the higher lands.

I have, &c.,

WALTER D. WHITE,  
Secretary.

J. M. Smail, Esq., Engineer-in-Chief, Water and Sewerage Board.

Sir,

The whole of the storm-water drainage of Marrickville Valley, viz., parts of Petersham, Newtown, Marrickville, and part of St. Peters, flows into Cook's River. It is not intended to intercept any of the water which now flows down on to the flats, except that which would fall on roofs and backyards of premises, which will be ultimately connected to the sewerage system.

J. M. S.

The Secretary, Parliamentary Standing Committee on Public Works.

### C.

#### INFORMATION FORWARDED BY THE GOVERNMENT ASTRONOMER RESPECTING RAINFALL ON THE METROPOLITAN CATCHMENT AREA.

Sydney Station.—Rainfalls of 2 inches and over.

1886—March: 26th, 2·89. October: 15th, 4·68.

1887—May: 29th, 2·83; 31st, 2·18.

1888—December: 1st, 2·75; 16th, 2·64.

1889—February: 8th, 2·20. May: 25th, 2·23; 26th, 4·05; 27th, 4·69; 28th, 8·36. July: 12th, 2·20; 26th, 2·23.

1890—January: 30th, 2·49. February: 18th, 3·21; 20th, 3·25. March: 4th, 2·13; 24th, 2·10; 25th, 5·66. May: 2nd, 2·35. June: 28th, 2·57; 29th, 4·48.

1891—June: 22nd, 2·95; 27th, 2·21.

1892—February: 27th, 3·54. March: 5th, 2·51; 18th, 3·02; 20th, 4·34. September: 24th, 2·31. October: 17th, 2·08. December: 18th, 2·13.

1893—March: 8th, 3·30; 9th, 2·52; 23rd, 2·17.

1894—March: 20th, 3·10.

1895—January: 23rd, 2·14. February: 8th, 2·36.

3rd July, 1896.

H. C. RUSSELL,

Government Astronomer.

### D.

[To Evidence of J. P. Webster, Esq., A.M.I.C.E.]

#### CONTEMPLATED IMPROVEMENTS TO COOK'S RIVER.—STATEMENT BY THE BOROUGH ENGINEER, MARRICKVILLE.

1. (a) Does the flood affect the lower side of the dam at Cook's River?  
(b) How high may it reach above high water?  
(a) Yes.  
(b) Observations on this point have never been taken by me; but from a record of the flood in May, 1889, the water-level on lower side of dam was 2 feet above O.H.W.M. An easterly gale was blowing, with exceptional tides, so that the whole of the 2 feet could not be attributed to the increase of the volume of water by reason of flood in the upper part of the river.
2. (a) Does the flood at present affect Cook's River at the junction of Shea's Creek?  
(b) Are there any flood marks over high tide level?  
(a) The flood water must affect the river at the junction with Shea's Creek even more so than it does at the lower side of the dam, from the fact that its course is abruptly changed southward for nearly a mile, thus running in almost a straight line with the alignment of Shea's Creek, and exposing the junction of the two to the full force of all gales blowing from south to east, usually the heaviest that are experienced. Also, that after changing its course it contracts in width and becomes about the same as that portion of the river between the dam and Shea's Creek. Thus, while the river has not increased in size or velocity, the volume of water has been augmented by the whole of the Botany watershed through Shea's Creek and the full force of a south to east gale working directly against the current.  
(b) Not to my knowledge.

3. What will be the cost of altering Cook's River Dam so as to give sluice-gates on proper principles right across the 300 feet?
3. For lowering sills of present gates and replacing same with new ones, £2,012. For leaving sills of present gates at present level, replacing present gates with new ones, and extending openings to 300 feet wide, £2,500. For new work all through with sills on an uniform level, £4,210.
4. What authority is there for the statement that a rise of 4 inches of water above will make suitable gates work?
4. My own opinion. If I remember correctly 4 to 6 inches was mentioned. My reason in this case is that the position of the gates is so sheltered by the course the river runs east of the dam that material of the lightest description can be used in their construction. The effectiveness of tidal gates hinges on the following, viz.—1st. Angle at which they are placed. 2nd. Weight of material in their construction. 3rd. Amount of friction caused by the principle of hanging.
5. The cost of reclaiming V-shaped piece of land on the north-east corner near present Sydney side of the sluice-gates?
5. Level of reclaimed land, 2 feet above O.H.W.M. ; cost, £9,375.
6. Cost of dredging Cook's River and Wolli Creek?
6. Including cost of dredge, £3,000.
7. Cost of V-shaped fascine bank to direct course of Cook's River and Wolli Creek?
7. Cost, £750.
8. Cost of Marrickville Dam?
8. Dam, £534 ; sluices, £410. Total, £944.
9. Cost of drain, 40 feet wide down valley from intake?
9. Sides protected with stone-facing. Cost, £2,403.
10. Cost of sluice-gate in Marrickville Dam?
10. £410.

J. P. WEBSTER.

4th July, 1896.

APPENDUM.

Since writing answers to questions marked 2 (a) and (b) I have personally inspected Cook's River at eastern side of dam, also at entrance to Shea's Creek, have taken levels, and am now in a position to verify my statement that there is no difference in level of water to be of any practical value. In flood the water rises at the entrance to Shea's Creek similarly to what it does at the eastern side of the dam. The greatest difference during the late heavy gales was 2½ inches.

I found flood marks at both places which I make 10 inches over O.H.W.M.

J. P. WEBSTER.



1896.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

## COOK'S RIVER IMPROVEMENTS.

(MINUTE BY THE ENGINEER-IN-CHIEF FOR PUBLIC WORKS ON THE PUBLIC WORKS COMMITTEE'S RECOMMENDATION RESPECTING.)

*Printed under No. 23 Report from Printing Committee, 22 October, 1896.*

### Memo. by The Under Secretary for Public Works and Commissioner for Roads.

Department of Public Works, Sydney, 2 September, 1896.  
THE Minister would like to have Mr. Darley's report on the Public Works Committee's recommendation with regard to the Cook's River improvements.

R.H.,  
Under Secretary for Public Works and Commissioner for Roads.

Report herewith.—C.W.D., 5/9/96.

### Minute by The Engineer-in-Chief for Public Works.

Department of Public Works, Engineer-in-Chief's Office, Sydney, 5 September, 1896.  
Cook's River Improvements.

THE estimate submitted by the Public Works Committee for the scheme they proposed was £15,000. I did not see the details of the estimate before the report was issued, so am in no way answerable for the figures. The Committee did not fix the width of the openings to be made in the Cook's River dam—their recommendation being to make them the necessary width. The least width I consider necessary for flood-gates is 300 feet. In my original scheme I proposed 300 feet clear opening as necessary, so it is obvious that even a 300-foot waterway, more or less obstructed with sluices, is the very least that should be provided for.

My estimate for this work is	...	...	...	...	...	...	£19,500
To which should be added, at least, for training and retaining walls	...	...	...	...	...	...	3,500

Cost, exclusive of proposed land resumption	...	...	...	...	...	...	£23,000
---	-----	-----	-----	-----	-----	-----	---------

The Committee made no provision for disposing of the silt from the dredged channels. I provided for this in my original scheme, by proposing to resume some frontage above the Cook's River dam, and fixing a retaining wall behind which silt could be pumped. If this wall were continued up past the railway bridge to the Marrickville dam, all the silt to be raised from the river could be disposed of behind it. Unless this is done, the full extent of river-bed cannot be cleaned out, as the silt cannot be disposed of.

I attach a plan, showing the reclamation I refer to, and the land to be resumed, which only amounts to about 2 acres, and is but of small value.

I think the land, when reclaimed, would be of considerable value, having a long frontage to Cook's River Road.

C. W. DARLEY,  
Engineer-in-Chief for Public Works.

I take it Mr. Darley does not recommend the scheme as passed by the Committee.—R.P.H., 5/9/96. Mr. Darley. No, I cannot recommend the scheme as passed without amendment as above.—C.W.D., 7/9/96. Submitted.—R.P.H., 7/9/96. I should like details of Mr. Darley's estimate of £19,500 on this report.—J.H.Y., 1/10/96. Mr. Darley for estimate required by Minister.—Jno. P. (For Under Secretary for Public Works and Commissioner for Roads), 2/10/96.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

PARLIAMENTARY STANDING COMMITTEE ON  
PUBLIC WORKS.

R E P O R T

TOGETHER WITH

MINUTES OF EVIDENCE, APPENDICES, AND PLANS,

RELATING TO THE

PROPOSED CONSTRUCTION OF LOCKS AND WEIRS

ON THE

RIVER DARLING.

---

Presented to Parliament in accordance with the provisions of the Public Works Act,  
51 Vic. No. 37.

---

*Printed under No. 14 Report from Printing Committee, 20 August, 1896.*

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## MEMBERS OF THE COMMITTEE.

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 FRANCIS AUGUSTUS WRIGHT, Esquire.

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## PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

### CONSTRUCTION OF LOCKS AND WEIRS ON THE RIVER DARLING.

## REPORT.

THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS, appointed during the first Session of the present Parliament, under the Public Works Act of 1888, 51 Vic. No. 37, the Public Works Act Amendment Act of 1889, 52 Vic. No. 26, and the Public Works (Committees' Remuneration) Act of 1889, 53 Vic. No. 11, to whom was referred the duty of considering and reporting upon "the expediency of constructing Six Locks and Weirs on the River Darling, from Stony Point to Brewarrina," have, after due inquiry, resolved that it is not expedient the proposed work be carried out; and, in accordance with the provision of sub-section (iv) of clause 13 of the Public Works Act, report their resolution to the Legislative Assembly:—

1. It would appear that the first step taken in the direction of locking the Darling was the engagement of Mr. George Gordon, M.I.C.E., to report upon the subject on behalf of a syndicate known as "The River Darling Navigation Company." Mr. Gordon, in June, 1883, reported on the feasibility of constructing locks and weirs between Wilcannia and Wentworth. His report was to the effect that it was quite practicable to make the river permanently navigable from Wilcannia to Wentworth, but the company took no further action in the matter. About November, 1885, the Harbours and Rivers Branch of the Department of Public Works took the matter up, collected information, and prepared plans dealing with the subject, upon which the Engineer-in-Chief, Mr. Darley, reported in November, 1890. Exceptional rainfall and high rivers were the features of 1890 and 1891, and the question of constructing locks and weirs on the Darling was allowed to remain in abeyance until the middle of 1892, when it was referred to the Water Conservation Branch. In August, 1892, surveys of lock sites between Wilcannia and Menindie were put in hand, but three months later the work was temporarily abandoned owing to floods. In October, 1892, the Minister for Works instructed Mr. F. W. Ward, and Mr. H. G. McKinney, Chief Engineer for Water Conservation, to visit the Darling, and report on the whole question of the locking of that river and the utilisation of its waters. Their joint report was ordered to be printed on 18th January, 1893. The survey of sites, which had to be temporarily abandoned in December, 1892, could not, on account of the flooded state of the river, be resumed during nearly the whole of 1893. In December of that year the surveys were resumed on the Lower Darling, and in the succeeding month they were continued on the Upper Darling. This work was again interrupted by a flood in March, 1894, and a month later work had to be stopped on the lower part of the river also. In December, 1894, instructions were given for the preparation of plans of an experimental lock and weir at Bourke; on 29th March, 1895, sanction was given for calling for tenders for the same, that of Messrs. Kerle and Kerle, for £18,868 11s. 8d. being accepted. The contractors commenced operations on 10th June, 1895, and discontinued in November of that year, since when the Government have proceeded with the work. The scheme for locking the Darling between Bourke and Brewarrina was, on 11th December, 1895, referred by the Legislative Assembly to this Committee for inquiry and report.

Proposal to  
lock the  
Darling.—  
Departmental  
Statement.

Official  
description.

2. Under this scheme it was proposed to construct six locks and weirs on the River Darling, between Bourke and Brewarrina. Owing to the unstable character of the channel, and the great range of level from low river to high floods, the Chief Engineer for Water Conservation was of opinion it would be unsafe to construct weirs which would interfere with or obstruct the waterway. The proposed weirs would consist of a series of timber shutters, averaging about 11 feet in length by 3 feet 3 inches in breadth. Each shutter, when erect, would rest at its bottom edge against a hardwood beam, set in solid concrete sill, and would be supported by an upright trestle and a sloping strut, both of wrought-iron. When the river was at navigation level each shutter would be pulled forward till the sloping strut was disengaged from its rest, and would then fall back flat on to the sill. In flood-time the whole weir would rest flat on the river-bed, so that the only part of the work which would in any way obstruct the flow would be one lock wall. The presence of this obstruction would, it is said, in every case be more than compensated for by widening the channel at the weir and excavating the bed to give a level sill. As shutter weirs of this class have not been used for greater heights than 14 feet, those designed are all under this height and are a modification of the Chanoine shutters in use in several rivers in France and in the Great Kanawha River, Virginia, U.S. Adjacent to each weir would be a lock 200 feet long by 37 feet wide; the height from the floor of the lock to the top of the side-walls would be about 15 feet. The lift through the locks from one water-level to the next water-level would be about 6 feet. One of the lock-walls would be built in the bank and the other a short distance out into the stream. They would be composed entirely of concrete in the mass. There would be bays, each 6 feet in width, intended to regulate the flow when the river was low. Beyond the bays would be situated the weir proper, consisting of a series of timber shutters. The locks were designed to be 200 feet by 37 feet in the clear, which is considered sufficiently large to take an average river steamer and an average barge together. The length of river rendered navigable by the construction of locks and weirs from Stony Point to Brewarrina would be about 156 miles.

Estimated  
cost of  
original and  
alternative  
schemes.

3. The total estimated cost of the scheme was £121,100, the details being:—

	£	s.	d.
Excavation (soft) ... ..	5,301	12	0
„ (rock) ... ..	1,425	0	0
Concrete ... ..	76,831	5	0
Timber in lock gates, &c. ... ..	5,140	16	0
„ sheet piling ... ..	3,000	0	0
„ main piles ... ..	227	10	0
Wrought iron ... ..	5,100	0	0
Cast „ ... ..	4,500	0	0
Pitching ... ..	3,567	17	0
Ashlar ... ..	2,032	16	0
Gun metal ... ..	241	6	8
Lead in joints of hollow quoins ... ..	18	0	0
Tarring (three coats) ... ..	198	0	0
Lock-keepers' cottages ... ..	1,500	0	0
Punts and wire rope ... ..	1,200	0	0
Coffer dams and pumping ... ..	5,000	0	0
Total ... ..	£115,284	2	8
Supervision and contingencies ... ..	5,815	17	4
Grand Total ... ..	£121,100	0	0

An alternative scheme, at a cost of £108,000, was submitted by the Department to the Committee which involved a departure from the general design, as in this case, while the weir would be in the river channel, the lock would be in the Beemery Cowl. The length of this cowl is one mile and three-quarters, and the length of the river between its two ends is  $5\frac{1}{2}$  miles, so that when the river was low and the navigation passed through the lock, steamers would be able to shorten their journey by  $3\frac{3}{4}$  miles. The Beemery Cowl is occasionally used by steamers during high floods, but a considerable amount of excavation would be required to clear out its channel in places. This excavation has been allowed for in the estimate. The alternative scheme would substitute one lock and weir, with a 10-foot lift, for weirs 4 and 5 of the original scheme; and it would also involve an increase from 6 feet to 9 feet in the lift at Vincent's Rocks, and an increase from 7 feet to 8 feet in the lift at No. 6.

4. It was contended by the Engineer in charge of the scheme that the construction of a system of locks and weirs from Bourke to Brewarrina would conserve a large supply of water in the Darling which would be available for irrigation on both sides of the river; guarantee an abundant supply of good water to the town of Bourke; afford permanent water carriage between Bourke and Brewarrina, and, while providing cheaper carriage, save the cost of a railway to the latter place; materially enhance the value of the Crown land bordering on the river between those towns; and increase the traffic on the Great Western Railway.

Objects and advantages of original scheme.

5. The views of the Railway Commissioners, as expressed by the Goods Superintendent of the Department of Railways, are to the effect that any improvement of river communication north of Bourke might be regarded as tending to develop trade, and would be in the general interests of the community; that it would be an advantage to the Colony if the streams to the north of Bourke were made efficient waterways, as such would serve as feeders to the railway; and, further, that if public money were spent in the improvement of the river such dues should be levied as would pay interest on the capital sum expended. If the river were improved the settlers north of Walgett would, it is thought, send their wool by way of the Darling to the railway terminus at Bourke, that being the cheapest route, and thence to Sydney. When the Darling has been high, small steamers have proceeded as far as Mungindi, on the Queensland Border, and brought wool down to Bourke.

Views of the Railway Commissioners.

6. The Committee examined a number of witnesses in Sydney, and subsequently a Sectional Committee visited the site of the proposed works, and took the evidence of local witnesses. The fullest opportunity has been afforded to witnesses or others interested to place before the Committee any information relevant to the inquiry. In Sydney there were examined:—Mr. H. G. McKinney, Chief Engineer, Water Conservation Branch, Department of Mines, who stated the nature and objects of the scheme and explained the details of the Departmental plans; Mr. John Harper, Goods Superintendent, Department of Railways; Mr. Charles L. Shainwald, (Messrs. E. Rich & Co., Sydney and Bourke); Mr. R. D. Jones, Metropolitan Inspector of Stock, Department of Mines; Mr. H. C. Russell, B.A., C.M.G., Government Astronomer; Mr. J. W. Boulton, Superintendent of Public Watering Places and Artesian Water Supply, Department of Mines; Mr. T. W. E. David, B.A., Professor of Geology, University of Sydney; Mr. George Maiden, Manager, Messrs. Goldsbrough, Mort & Co. (Limited); Mr. E. F. Pittman, A.R.S.M., Government Geologist; Mr. J. C. H. Mingaye, Analyst and Assayer, Department of Mines; Mr. F. B. Guthrie, F.C.S., Chemist, Agriculture and Forestry Branch, Department of Mines; Mr. P. Scarr, Principal Assistant Engineer, Roads and Bridges Branch, Department of Public Works; Mr. J. Burt, Draftsman-in-charge, Information Bureau, Department of Lands; Mr. W. S. Campbell, Chief Clerk, Department of Agriculture; Mr. C. W. Darley, Engineer-in-Chief for Public Works; Mr. G. Colquhoun, Crown Solicitor; and Mr. Alexander Oliver, M.A., President of the Land Appeal Court

The Committee's inquiry.

7. The Sectional Committee's report is subjoined hereto. That Committee arrived at the conclusion, after carefully considering all the circumstances, that the proposed construction of locks and weirs on the River Darling is premature. The following is a summary of the report in question:—

Sectional Committee's report.

#### SUMMARY OF REPORT BY THE SECTIONAL COMMITTEE.

1. Conservation of water for irrigation purposes—
  - (a) The Departmental statement with regard to the suitability of the land available for irrigation settlement adjacent to the river was not borne out by investigation, because nearly all the river frontage is liable to inundation at irregular intervals for a sufficiently long period to destroy stone-fruit trees and even lucerne.
  - (b) The paucity of the local demand for the products of intense culture and the distance from the metropolitan market would delay any rapid settlement upon irrigated areas.
  - (c) The large areas of suitable and more accessible land not yet utilised creates grave doubt with regard to there being any great demand for irrigation farms in this district.

(d)

- (d) It is doubtful if conditions are favourable for extensive irrigation from a series of pumping stations.
  - (e) It is questionable if pastoral occupation at present can profitably give way to agricultural settlement.
  - (f) Irrigation operations are not likely to extend at present beyond supplying fodder for such animals as are kept for domestic use, or for the more valuable stock.
2. Enhanced value of Crown lands—
    - (a) It is not probable that the value of Crown lands adjacent to the river would be materially increased.
  3. River navigation—
    - (a) The traffic on the Great Western Railway would not be materially augmented by the construction of the proposed works, and any increase would arise through leakage from other lines.
    - (b) The traffic on the route between Bourke and Brewarrina from intermediate points is very limited.
    - (c) The present rates of river freights would not be appreciably reduced, and the river route could not be utilised for the carriage of stock.
  4. Water supply to the town of Bourke—
    - (a) There is no serious objection to the present supply, and the maximum improvement contemplated by the Government proposal will be effected by the weir in course of construction.
  5. Other matters considered by the Sectional Committee—
    - (a) It is claimed that the shutter or movable weir has obvious advantages over a fixed weir, but the principle should be tested by the weir at present in course of construction before extending operations.
    - (b) The water impounded by the Bourke weir should be sufficient to test the question of irrigation by pumping under favourable conditions.
    - (c) Irrigation by artesian water at Pera Bore appears promising. A thorough test should be made to demonstrate the efficiency of this method of irrigation.
    - (d) The locking of the River Darling for inland navigation is a matter of importance to several of the Colonies, which should participate in the cost, and this question could best be dealt with by a Federal Parliament.

#### THE AREA UNDER CONSIDERATION.

The area under consideration.

8. That portion of the Darling River specially under consideration extends from Brewarrina to Bourke, a distance of about 156 miles. Although the course of the river is sinuous, it preserves a generally western trend. The waters of the Bokhara, augmented by those of Cato Creek, and the Culgoa, are the main feeders to the Darling from the north within the parts proposed to be locked. The Bogan is the main tributary from the south. The summer level of the Darling may be stated approximately as 40 feet below the river banks, which, however, are subject to submergence at irregular times and for a sufficiently extended period to be disastrous to plant-life. The water-level is sufficiently high to permit navigation for about half time, taking one year with another. The unreserved Crown lands within leasehold areas adjacent to the proposed works are 81,139 acres in extent; unreserved Crown lands within reserved areas and reserves not held under special homestead, 451 acres; reserved lands, 131,051 acres; homestead leases, 124,278 acres; alienated lands, 12,487 acres. A return published in 1889 shows that about £80,111 have been expended on snagging the Darling; of that amount it is stated about £4,000 to £5,000 have been expended on the distance under consideration.

#### THE CATCHMENT AREA OF THE DARLING RIVER, ABOVE BOURKE.

Catchment area of Darling above Bourke.

9. The catchment area of the Darling River above Bourke, within the Colony of New South Wales, may practically be regarded as bounded on the south-west by the railway from Bourke to Nyngan; thence by the Bogan to its source;

source; thence to Molong, Orange, and Bathurst; thence following the main range to the Queensland Border; thence following the Macintyre River and the twenty-ninth parallel of latitude to the Culgoa River; and thence by the watershed of that river to the Darling. The area embraced within these boundaries is 73,400 square miles. The catchment area within Queensland is approximately 49,000 square miles; therefore the Darling River at Bourke is the surface outlet for the rainfall on an area of 122,400 square miles.

#### SUPPLY OF WATER FOR IRRIGATION AND RIVER NAVIGATION.

10. The scheme submitted to the Committee has two main objects in view:—
- (1.) The conservation of water for irrigation purposes.
  - (2.) The maintenance of uninterrupted river navigation.

Supply of water for irrigation and navigation.

The first, speaking broadly, means taking water out of the river for use upon the land; the second, the preservation of water in the river for navigation purposes.

In very dry seasons the Darling may become a series of lagoons only; the supply reaching it from the catchment area not being sufficient to preserve even a sluggish current. It therefore follows that, should irrigation assume considerable dimensions, it may become antagonistic to navigation, when one or the other must be suspended.

When proposing to utilise water for a dual purpose it should be made clear that the supply will be ample. In the opinion of the Committee the volume of water in the Darling is insufficient, during prolonged droughts, to sustain leakage at the weirs and locks, loss from evaporation, the withdrawal for extensive irrigation operations, and still preserve the level necessary for river navigation.

#### IRRIGATION BY CONSERVATION AND PUMPING UNDER THE PROPOSED SCHEME.

11. Nearly all the land on the banks of the Darling between Bourke and Brewarrina is subject to inundation at irregular intervals for a sufficiently long period to destroy plant-life, stone-fruit trees, and even lucerne. Adjacent to Bourke is an area of 3,000 acres above flood-level and suitable for irrigation purposes. The weir in course of construction should furnish a test of the commercial value of irrigation by conservation and pumping under the most favourable conditions in respect to water, soil, contiguity to population, and proximity of railway communication. Irrigation by river water might well be attempted here before committing the Colony to expenditure upon a large scale, for it may disclose difficulties not at present foreseen, in addition to those particularised in the Sectional Committee's report, as well as those to which reference is made in the clauses dealing with artesian irrigation.

Irrigation by conservation and pumping under proposed scheme.

#### ARTESIAN WATER SUPPLY.

12. It is necessary in expressing an opinion with regard to the extent of the subterranean water supply to emphasise the fact that at best the boundaries as at present laid down can be regarded only as a rough approximation. Recent investigations have much altered ideas previously held as to its extent. Professor David and the Government Geologist, when placing their valuable evidence before the Committee, emphasised the fact that the information upon which they based their opinions was fragmentary, and it was probable, with the knowledge that exploration in the past had caused previous inferences to be modified, that further knowledge would in many ways modify their present views, which were based upon admittedly scanty information.

Artesian water.

To make this clear, two instances may be quoted:—

- (1.) Recent investigations show that the eastern boundary of the intake beds in Queensland extend from Texas towards Toowoomba instead of from Texas towards Roma as previously supposed, with the reasonable inference of an extension further north. The additional area given by the alteration of boundary is not less than 19,000 square miles.

Three

Three years ago the Government Geologist of Queensland held the opinion that the intake beds west from Toowoomba had a width of about  $\frac{1}{5}$  of a mile. Eighteen months ago he expressed the opinion that the width was about 5 miles; and now the Government Geologist of this Colony states the greatest width to be not less than 200 miles.

- (2.) The Government Geologist of Queensland mapped out the Blythesdale Braystone (the lowest beds of the Cretaceous formations) as extending in a south-easterly direction from Roma towards Texas. The Government Geologist of this Colony is doubtful as to whether the Blythesdale Braystone outcrops in New South Wales, and expresses the opinion that the formation referred to near Texas is an extension of the Ipswich sandstone, and states that beyond all doubt the bores at Moree and Coonamble are through rocks of Triassic age, and should be classed as Ipswich sandstone formation. Therefore the artesian basin is not correctly stated as being bounded by a line crossing from Roma in a south-easterly direction to a point about 40 miles north-west from Texas, and thence west of Coonamble; but is approximately bounded by a line through Murphy's Creek, near Toowoomba, in a south-westerly direction through a point about 15 miles west from Texas, thence through Wallangra, Warialda, and generally in a south-south-westerly direction to a point west of Gilgandra. Previously it was supposed that only the Cretaceous beds were water-bearing, but now it is known that the Triassic beds, which are of the same age as the Sydney freestone, will furnish artesian water, and may yet provide the chief part of the supply.

The known extent of the water-bearing strata has, therefore, by recent exploration, been extended far to the east and south from previously laid-down boundaries, and it is probable will be further extended towards the south-west. To the north and north-west it is yet undefined in detail, but it is probable that generally speaking it is determined only by the northern limits of the continent. This vast supply of water, readily accessible in a country which is visited frequently by long periods of extreme drought, suggests probabilities which it is impossible to over-estimate.

#### VOLUME OF ARTESIAN WATER AVAILABLE FOR IRRIGATION.

Artesian  
water  
available for  
irrigation.

13. Although the quantity of water disappearing from the catchment area of the Darling into the underlying strata is so great as to be practically regarded as inexhaustible, the problem of its interception and utilisation depends upon many questions with regard to which there is but fragmentary knowledge. Information with respect to the area of water-bearing strata is doubtful, owing to the incompleteness of exploration. The discharge from an artesian bore depends upon hydraulic pressure, which again depends upon the level of the intake and frictional resistance, the latter being influenced by the fineness of the strata through which the water flows. Even the great question of eventual discharge is at present viewed as a question not yet completely solved. Subterranean water having found its level does not rest in porous strata, but sluggishly makes its way to the sea, it is believed both under the Gulf of Carpentaria and under the southern sea-board. Although the movement of the current is sufficient to keep the water fairly pure, the frictional resistance experienced in obtaining discharge aids in maintaining the hydraulic pressure which forces it to the surface when tapped by boring.

Since the area of the water-bearing strata is doubtful, the supply problematical, and the information with respect to the discharge inferential, it is evident that no statement accurate in detail can be made regarding the supply available, still there is no doubt that a vast quantity of water may be intercepted and utilised. Professor David states the area of land to which 20 inches per annum could be supplied for irrigation purposes might be regarded as approximately 1,000,000 acres. The Government Geologist believes it probable that twice that area might be utilised with the present known supply of artesian water.

Cost

## COST OF OBTAINING ARTESIAN WATER.

14. The cost of obtaining water by boring, in comparison with the results of the operation, naturally varies. The cost generally depends upon the depth of the bore—and depth does not necessarily decide the question of supply. Cost of  
artesian  
water.

Euroka Bore, at a depth of 1,543 feet, costing £2,045, delivers 3,000,000 gallons per day.

Kelly's Camp Bore, at a depth of 1,577 feet, and a cost of £2,104, delivers 600,000 gallons per day.

Osaca Bore, at a depth of 1,646 feet, and a cost of £2,368, delivers 350,000 gallons per day. It is reasonable to believe that the cost of boring will be much less as the methods become more ingenious and the amount of such work increases.

The capital cost of furnishing a sufficient supply of water for irrigation, on the basis of the cost of the Euroka Bore, would be £1 9s. 5d. per acre; on the basis of the Pera Bore, £5 4s. 7d.; on the basis of the Clifton, £2 13s. 1d.; on the basis of the Waanaaring, £10 10s. 11d.

The cost of water on the lowest of these bases is out of all comparison cheaper than the cost of water obtained by conserving and pumping. A fuller knowledge of the limits of the artesian supply should enable sites to be chosen where, with fair certainty, a supply would be cheaply obtained.

## SUITABLENESS OF ARTESIAN WATER FOR IRRIGATION PURPOSES.

15. This question depends upon three considerations—

- (1.) The constituents of the soil to which the water is to be applied.
- (2.) The quantity of deleterious matter in the water.
- (3.) The use to which the land is to be put.

Suitableness  
of artesian  
water for  
irrigation.

1. The land over large extents of country above water-bearing strata is suitable for irrigation, much of it being comparatively free from alkali. The conditions compare favourably with great areas of land which are successfully irrigated in America. Deleterious matter in the artesian water would, therefore, not be materially augmented by the presence of plant-destroying substances in the soil itself if the site be wisely chosen.

2. Artesian waters for irrigation purposes may for practical consideration be thus classified:—

- (a) Those containing less than 35 grains of alkaline matter to the gallon, which it appears reasonable to infer may be satisfactorily used for irrigation purposes; and
- (b) Those containing a greater quantity of deleterious matter than 35 grains to the gallon.

Speaking approximately, it appears that two-thirds of the bores supply water which may with fair success be utilised for the purpose of irrigation; the remaining one-third will necessitate the exercise of greater care and a larger expenditure in tith, and it will be well to delay experiments with them until success has been assured with the more promising waters.

3. The evidence is unanimous that water containing, as does almost the whole of the artesian supply, more or less carbonate of soda should only be used for irrigation purposes in cultivation in connection with a thorough system of deep drainage, carefully-prepared soil, and competent management. Any attempt to apply artesian water, unless under such conditions, will probably gradually charge the soil with quantities of deleterious matter destructive to plant-life. Therefore the artesian water in most cases should be used only for intense culture, and not under a system of broad irrigation to flood grazing areas.

The evidence taken on this question justifies the Committee in expressing the following opinions:—

- (1) The amount of artesian water which can be made available is sufficient to irrigate a vast area of land.
- (2) That much of the water may safely be used under proper control, upon skilfully-tilled suitable soil.

- (3) That much of it can be delivered on the land more cheaply than by a conservation and pumping scheme such as submitted to the Committee.
- (4) That it will be unwise to apply it for broad irrigation purposes without suitable drainage.
- (5) No irrigation settlement should be located at any bore without thorough investigation with regard to the suitability of both water and soil.

#### IRRIGATION SETTLEMENTS AT ARTESIAN BORES.

Irrigation settlements at artesian bores.

16. Notwithstanding the apparently promising results being disclosed at Pera Bore, there does not appear to be any special demand for the adjacent land for settlement purposes. The low price charged for a supply of water and for land, in comparison with such a settlement as Mildura, should enable the State readily to find tenants, but several of the farms have not yet been applied for. The reasons for this appear to be:—

1. The advantages of irrigation have not yet been realised.
2. The areas being situated in a portion of the Colony almost totally given up to pastoral settlement; there is therefore no supply of local farmers willing to make the test.
3. The paucity of the local markets for the products from intense culture.
4. The distance from the metropolitan market.

#### ARTESIAN BORES—COST AND RETURNS.

Artesian bores—cost and returns.

17. There are in existence in the Colony at present forty-six artesian bores, which have been constructed at a cost of £119,155. The yearly expenditure upon them is £2,083, and the annual return £1,282. Thus the Government, after an initial expenditure of £119,155 on artesian water, finds itself called upon to incur a yearly outlay of £800 to maintain them. The Committee recognise the advantages conferred upon the naturally waterless country by this artificial supply, and the great incidental advantages that thereby accrue to the State, but are of opinion that the benefits derived therefrom should be sufficient to render the bores self-supporting.

#### RIVER NAVIGATION.

River navigation.

18. For the past fourteen years the Darling River has been navigable on an average for half the year, the boats passing up and down stream free from toll and without serious delay. Various rates of freight are quoted, but a reasonable estimate with easy navigation may be stated at 20s. per ton. The quantity of freight is approximately 10,000 to 12,000 tons per annum between Brewarrina and Bourke, with very little intermediate traffic. With permanent navigation ensured, and assuming the imposition of a toll to recoup the outlay for interest, maintenance, and management of the proposed works, it is doubtful if the tonnage rate would be appreciably reduced. Most of the traffic of the district reaches the railways at Bourke or Byrock, and any increase in the revenue returns of the Great Western Line would be the result of leakage from the Northern systems.

The inhabitants of those districts most interested in obtaining the readiest way to market object to the proposal on the following grounds:—

- (1) Because it will only provide for a portion of the produce of the district.
- (2) Because stock (one of the great products of this pastoral country) cannot use it.
- (3) Because the time occupied in transit will be greater and the cost heavier than by direct railway communication between Brewarrina and Byrock.

#### AMOUNT OF WATER FALLING ON CATCHMENT AREA OF THE DARLING RIVER, AND ITS DISPOSAL.

Water falling on catchment area of Darling, &c.

19. The average rainfall, extending over a period of 16 years, upon the catchment area of the Darling, in New South Wales, is about 24 inches, and on the Queensland area about 30 inches.

According

According to the Government Astronomer, the amount of water which the Darling discharges at Bourke is less than 2 per cent. of that falling on this area, and is equal to about  $\frac{3}{10}$  of an inch per annum over the whole catchment area. The residue of 98 per cent. must be accounted for by evaporation, percolation, and subterranean drainage.

The evaporation from a water surface, such as a dam or river, in this locality is about  $59\frac{1}{2}$  inches yearly. Competent witnesses have informed the Committee that under the conditions obtaining over the watershed of the Darling, evaporation will account for but a small portion of the 98 per cent. unaccounted for in the discharge of the river at Bourke, and that a great proportion of it sinks below the surface.

The Darling being the discharging channel for only about 2 per cent. of the water which falls on the catchment area, and since much of the residue apparently goes to swell the volume of subterranean water, the importance of this supply, and the great part it will play in the development of the west, if it can be intercepted and utilised, becomes evident.

#### RIPARIAN RIGHTS.

20. Riparian rights in this Colony may be considered without reference to the rights of adjoining provinces. A riparian right may be described as a right of owners on either side of the stream to use the water for domestic purposes and for their cattle, and entitles landowners to insist that it shall continue to flow past their holdings as it would were the river in its natural state. The construction of weirs would, under certain conditions, have the effect of retaining water which, had they not been erected, would have found its way to the lower reaches, and thus the riparian rights of occupiers below these weirs may be interfered with prejudicially. In the absence of further legislation it is clear that the construction of weirs on rivers with a discharge as limited as, at intervals, is that of the Darling, would certainly lead to friction and litigation.

#### INLAND NAVIGATION.

21. Had the proposed works been justified by the local interests involved the Committee would have recommended their construction immediately the question of riparian rights had been comprehensively dealt with, irrespective of the national question of river navigation throughout the entire length of the Darling, but sufficient local justification does not at present exist. At a cost, estimated at £1,200,000, the Darling may be rendered navigable for a distance of 1,300 miles. Two results would probably follow such an expenditure:—

- (1) The transference of trade to Victoria and South Australia.
- (2) Interference with the railway revenue of New South Wales.

It therefore is not reasonable that the total cost of works which will much benefit the sister colonies, have the result of lessening the railway revenue, and transfer trade to business centres beyond its confines, should be borne by this Colony alone. The navigation of the River Darling is a matter which will be more comprehensively dealt with by a Federal Parliament, in which all interests would be fairly represented.

#### VIEWS OF THE COMMITTEE.

22. The Committee have endeavoured to make it clear that the great questions involved have not been controlled by the commercial aspect alone. The success of irrigation, notwithstanding its possibilities, may be delayed by extravagant expenditure which does not rest on a basis of competent management, for which the way has not been prepared by careful experiment. After full consideration, the Committee are reluctantly forced to the conclusion that it would be premature to recommend the adoption of the scheme referred by the Legislative Assembly to the Parliamentary Standing Committee on Public Works.

Resolution  
of the  
Committee.

23. The following extract from the Minutes of Proceedings of 28th and 29th July, 1896, indicates the resolution arrived at by the Committee :—

TUESDAY, 28TH JULY.

Mr. Wright moved,—“ That, in the opinion of the Committee, it is not expedient the proposed Construction of Locks and Weirs on the River Darling, as referred to the Committee by the Legislative Assembly, be carried out.”

Mr. Humphery seconded the motion.

The debate upon the motion was adjourned.

WEDNESDAY, 29TH JULY.

The adjourned debate upon Mr. Wright's motion,—“ That, in the opinion of the Committee, it is not expedient the proposed Construction of Locks and Weirs on the River Darling, as referred to the Committee by the Legislative Assembly, be carried out,”—was resumed.

The motion, after further discussion, was passed.

THOS. EWING,  
Chairman.

Office of the Parliamentary Standing Committee on Public Works,  
Sydney, 31 July, 1896.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

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SECTIONAL COMMITTEE.

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CONSTRUCTION OF LOCKS AND WEIRS ON THE RIVER DARLING.

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REPORT.

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THE Sectional Committee appointed to inspect, and take evidence in reference to the proposed construction of locks and weirs in the river Darling beg to report that they personally inspected the Pera Irrigation Settlement, the lock and weir in course of construction below Bourke, the proposed sites for locks and weirs at Stony Point and Beemery, the alternative site for a lock in the Beemery Cowl, and the proposed site for a lock and weir at the Fisheries, Brewarrina. The Committee also examined witnesses, and obtained information generally in regard to the project.

The Committee left Redfern Railway Station by the 8 p.m. train on Friday, 19th June, and arrived at Bourke at 6.30 p.m. the following day. On Monday, 21st June, they visited the Pera Bore, and inspected the Government experimental farm and adjacent homestead selections, examining Mr. Fred. Hersey, one of the settlers. The following day they inspected the work in progress at the site of the lock and weir now in course of construction in the Darling, 2 miles below Bourke, and later in the same day continued their inquiry at the Council Chambers, Bourke, when P. J. Biddulph, solicitor, Bourke; W. J. Holding, N.S.W. Government Appraiser; D. W. F. Hattan, N.S.W. Government Stock Inspector; and J. H. Thomas, manager, Winbar Station, were examined. The sitting was adjourned at 4.15 p.m., and resumed at 8.15 p.m. at the "Royal Hotel," when Mr. Ed. MacFarlane, District Surveyor and acting Chairman of the Land Board, was examined. The inquiry was continued at the Council Chamber throughout Wednesday, E. C. Millen, Council Clerk, Bourke; A. Harders, acting Sub-collector of Customs; Arthur Senior, wool-scourer; and E. D. Millen, M.P., being examined. On Thursday, 25th June, the Committee proceeded to Beemery *en route* to Brewarrina, passing the night at Beemery, and inspecting the site of the proposed lock and weir No. 4, and the site of the proposed alternative lock and weir to be substituted for Nos. 4 and 5. The journey was resumed the next day, a visit being paid to the homestead lease of Mr. Geo. Woods, at Yambacuna, who, by means of a windmill and a centrifugal pump driven by an 8-horsepower steam-engine, uses the water of an ana-branch of the Darling for irrigation purposes. Mr. Woods was examined at some length, and the Committee continuing their journey arrived at Brewarrina at 5.15 p.m. On Saturday, 27th June, the Committee met at the Court-house, Brewarrina, at 10 a.m., and examined the following witnesses:—H. L. Cathie, stock and station agent, Brewarrina; W. J. Jamieson, stock and station agent; W. A. MacVean, manager Quantambone Station; J. Mannix, homestead lessee, Cato Creek; J. H. Saunders, storekeeper; A. D. Kerrigan, agent for Messrs. E. Rich & Co.; P. D. M'Ellicott, W. C. Colless, hotel-keeper and homestead lessee; and A. Loder, stock and station agent. On Sunday the Committee were joined by Mr. W. Poole, Assistant Engineer, Water Conservation Branch, Department of Mines, by whom they were accompanied on Monday, 29th June, in a visit of inspection to the site of the proposed lock and weir at the Brewarrina Fisheries. Later, the Committee resumed their inquiry at the Court-house, and examined R. J. Kelly, chemist and druggist; W. Coleman, bridge care-taker; T. MacMahon, storekeeper; R. R. Machattie, pastoralist; and C. Crane, storeman for Messrs. E. Rich & Co. At 1 p.m. the Committee left Brewarrina, and arrived at Beemery at 4.30 p.m. On Tuesday, 30th

30th June, the Committee, accompanied by Mr. W. Poole, made a further inspection of the site of the proposed lock and weir, at Beemery, and of the site of the proposed alternative lock in the Beemery Cowal, and continuing their return journey arrived in Bourke at 5.15 p.m. Next day the Committee, accompanied by Mr. Poole, proceeded to Stony Point, and inspected the site of the proposed lock and weir there, returning to Bourke in the afternoon. On Thursday, 2nd July, the Committee met at the Council Chambers, Bourke, at 10 a.m. and examined Mr. Jefferson, manager, Government farm, Pera Bore, and Mr. Seaver, Engineer-in-charge of works at Bourke lock and weir, concluding their inquiry on Friday with the examination of Mr. Poole and Mr. Macdougall, Inspector of Public Watering Places. Leaving Bourke at 7.50 a.m. on Saturday, the Committee arrived in Sydney early on Sunday, 5th July.

The advantages sought to be derived from the proposed works were stated by Mr. McKinney in his examination before the main Committee in Sydney (*Vide Evidence, p. 1*) to be—

1. The conservation of water for the irrigation of land on both sides of the river.
2. The supply of water to the town of Bourke.
3. Permanent water carriage between Bourke and Brewarrina, thus saving the cost of constructing a railway to the latter place.
4. Increased value to Crown lands bordering the river.
5. Increased traffic on the Great Western Railway.

The Sectional Committee have considered these advantages in what they deem to be the order of their relative importance, and in this connection is to be noted Mr. McKinney's assertion (Questions 12 and 15) that the "dominating purpose" of the scheme is to provide for irrigation.

The observations and inquiries of the Committee do not justify Mr. McKinney's expectation that 15,000 acres of land in immediate proximity to the river are available for close settlement and irrigation. With the exception of about 3,000 acres at North Bourke, and a similar area near Brewarrina, nearly all the river frontage between Bourke and Brewarrina is liable to inundation at irregular intervals. The several streams flowing into the Darling above Bourke drain an enormous area lying to the north and north-east, and a heavy fall of rain in Southern Queensland, and upon the western slopes of the New England table-land, is quickly followed by a rise in the main river and a flooding of the low-lying lands upon its banks. These areas are thus submerged, as a rule, for a considerable period, and evidence shows that such floodings destroy stone-fruit trees, and even lucerne. Where the land is not subject to flood, it is suitable for the growing of most varieties of fruit, and intense cultivation similar to that at Mildura might be followed. But the apparent paucity of the local demand, and distance from the metropolitan market, render it unlikely that any large area would be used in this way for many years, especially when it is remembered that equally good soil is to be obtained much nearer to Sydney, and in places where climatic conditions are more favourable for the operations of the agriculturist and the orchardist. Moreover, the raising of the river level as proposed would not materially lessen the cost of pumping water from the channel to the height necessary for its distribution over the cultivation area.

Mr. McKinney stated in his evidence before the main Committee that, if the proposed scheme be carried out, a demand will arise for Crown land at present unsuitable for occupation in small areas; but the opinion of local witnesses seemed to be that the country between Bourke and Brewarrina is better adapted for pastoral than for agricultural use. The attempts to settle population more closely by means of the homestead lease system have proved successful to a limited extent only in this district, but it does not appear to be necessary to repeat the reasons locally assigned.

It has been stated in evidence that materially enhanced value would accrue to the Crown lands bordering the river, by the conservation of sufficient water to admit of irrigation and to keep the river permanently navigable, and, therefore, that a charge should be levied for the right to take water to irrigate agricultural areas  
and

and for the flooding of the natural pasturage. Upon these points, however, a large majority of the witnesses were of opinion that the expected benefits would not follow upon the construction of the works. It was affirmed that Crown lessees could not profitably put under crop an area much larger than that required to provide in bad seasons for such animals as are kept for domestic use and for the more valuable stock; and that to irrigate grazing areas is commercially impracticable; nor is it apparent that the pastoral holdings in the district could then fairly be appraised at a higher rental than that at which they are assessed under present conditions, the river water being now available in sufficient quantities for those prepared to incur the cost of distribution by pumping appliances.

It did not appear to the Committee that the traffic upon the Western line would be greatly increased by providing a permanently navigable water highway between Bourke and Brewarrina. Possibly some of the wool which now finds its way to Narrabri would then come to Bourke, and thus give the Great Western Railway the advantage of additional haulage, and a little more traffic also might be obtained from the district to the north and north-east of Brewarrina, but the volume would not be appreciably increased, while the evidence taken at Brewarrina is strongly adverse to the proposal on various grounds, one of which is its failure to provide a means of transit for stock.

With regard to the local traffic, evidence was given to show that, of approximately 10,000 tons annually passing along the river between Bourke and Brewarrina, about 300 tons only were handled at intermediate points, while, although the river has at times been navigable for several consecutive years, the freight has never been less than 20s. a ton, and it may reasonably be assumed that even with a permanently navigable river, which might involve the imposition of tonnage dues, there would be no substantial reduction in the rates of carriage.

As to the necessity of providing an abundant supply of good water for the town of Bourke, the Committee were unable to ascertain that any serious complaint had been made by the inhabitants concerning the present supply; but in any case, the completion of the Bourke weir should impound a body of water sufficient in all seasons, and likely, by reason of its large volume, to be always of good quality. Therefore, the recommendation of the Committee cannot be influenced by this consideration.

Evidence has been received in support of the alleged superiority of the shutter, or movable, weir over the fixed weir; but, at this stage, any expression of opinion as to the relative merits of the two systems would be of little or no value, though the impression made upon the Committee was that movable weirs are less likely to seriously obstruct the course of the river in flood time, and possess the advantage of allowing the uninterrupted passage of vessels up and down stream during the periods when the river by natural flow is at navigable level.

Before any general scheme for locking the Darling is adopted, ample time should be afforded to test the effect of the construction of the Bourke weir upon the river channel, both above and below, and to ascertain if movable shutters become unworkable after long submersion. It is conjectured that any failure of the shutter weir could be remedied by the subsequent construction of a fixed weir, as the lock would be common to both designs. The construction of this weir will furnish the means of ascertaining the effect of water conservation in accomplishing that closer settlement of the Western District which it is anticipated by some witnesses would follow the completion of the proposed works. A comparison of the results with those obtained at the Pera settlement may determine the superiority of irrigation with river water over irrigation from artesian supplies.

At the Pera Bore, which the Committee visited, an area of 640 acres has been set apart by the Government for the establishment of an experimental farm, and to allow of small holdings being taken up under the perpetual leasing provisions of the Land Act of 1895. Twenty such blocks, each containing 20 acres, have been surveyed, and eleven of them have already been allotted, most of the tenants, at the time of the Committee's visit, having made considerable progress in the work of clearing the land and preparing it for cultivation. Some excellent fodder crops have been already obtained from the Government farm, and flourishing crops  
of

of vegetables were observed on the settlement areas, while the holders appear with good reason, considering their brief occupancy, to be confident that they will obtain profitable returns for their industry. The terms offered by the Government—5s. per acre per annum for the first five years, to be increased to 10s. per acre at the end of that period, with the right to use sufficient water from the bore for the irrigation of crops—should be sufficiently attractive to persons of limited means desiring to settle in the district, should lead to the whole area available being speedily taken up, and demonstrate if cultivation by means of irrigation can be profitably undertaken.

The Committee sympathise with those who would like to see settlement upon the Darling liberally though prudently assisted by the expenditure of Government money in providing adequate pumping machinery for the utilisation of the water of the river; but a practical opportunity for the discovery of the results likely to follow closer settlement and the application of "intense cultivation" will be furnished by the completion of the Bourke weir. This will conserve sufficient water for the irrigation of land adjoining the river for a distance of 25 miles, and will give a frontage of 50 miles to permanent water. Within this area are embraced about 3,000 acres of red, loamy soil at North Bourke, described by Mr. MacFarlane as suitable for small holdings. Such an area would be ample to determine the possibility of closer settlement in the district, and the alleged superiority for irrigation purposes, which has been insisted upon by some of the witnesses, of river as compared with artesian water. Persons acquiring irrigation areas here will have the advantage of the close proximity of the Western Railway when it becomes necessary for them to seek distant markets for their produce.

If it be the intention eventually to carry out a scheme of inland navigation, then the whole length of the Darling must be locked, and the proposed work can only be regarded as the initial step towards rendering the river navigable for about 1,300 miles, at a cost which the Committee have been informed would amount to nearly £1,200,000. The benefits resulting from this expenditure would, however, accrue principally to Victoria and South Australia, while the trade of New South Wales (the Colony undertaking the expenditure) and the earnings of her railways would suffer considerably by the increased competition of her southern and western neighbours, which the improvement of the Darling would facilitate. The Committee are therefore of opinion that it would be unwise for this Colony to engage in so lavish and disinterested an outlay until, upon the federation of the whole of the Colonies, the question can be comprehensively dealt with by a Federal Parliament, and the expense of the undertaking fairly apportioned.

Finally, the Committee, whilst endeavouring to avoid taking the contracted view which might arise from a consideration of the proposed work in its commercial aspect alone, and fully recognising the possibilities of irrigation, are forced to the conclusion that it would be premature to recommend the adoption of the scheme as referred by the Legislative Assembly to the Parliamentary Standing Committee on Public Works.

F. T. HUMPHERY,  
Chairman.

7th July, 1896.

# PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

## MINUTES OF EVIDENCE.

### CONSTRUCTION OF LOCKS AND WEIRS ON THE RIVER DARLING.

TUESDAY, 12 MAY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.  
The Hon. CHARLES JAMES ROBERTS, C.M.G.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
GEORGE BLACK, Esq.

The Committee proceeded to consider the proposed Construction of Locks and Weirs on the River Darling.

Hugh Giffen McKinney, Esq., Chief Engineer, Water Conservation Branch, Department of Mines, sworn, and examined:—

1. *Chairman.*] Have you a statement to make with reference to the proposal now under the consideration of the Committee? Yes; it is as follows:—

#### LOCKING THE RIVER DARLING.

##### *Historical Sketch.*

THE first action of a definite nature taken in connection with the locking of the river Darling was the engagement of Mr. George Gordon, M. Inst. C.E., to inquire into and report on the question on behalf of a syndicate termed "The River Darling Navigation Company." In June, 1883, Mr. Gordon presented to this Company his report on the construction of locks and weirs in the part of the river between Wilcannia and Wentworth. The immediate object in view was to determine whether that portion of the river Darling could be rendered permanently navigable, at such cost that the works would be remunerative to the Company. In regard to this Mr. Gordon arrived at the conclusion that it was quite practicable to render the river permanently navigable from Wilcannia to Wentworth, but no further action was taken by the Company he represented.

The subject seems to have remained in abeyance till about November, 1885, when it was taken up by the Department of Harbours and Rivers, by direction of the then Minister for Works. A considerable amount of information was collected and many plans were prepared by that Department, and the conclusions based on these arrived at by the Engineer-in-Chief were embodied in a Report, dated 27th November, 1890.

The years 1890 and 1891 were years of exceptional rainfall and high rivers, and it was doubtless in a large measure owing to this that the question of constructing locks and weirs on the river Darling was allowed to remain in abeyance till 20th July, 1892. Up till this time the river Darling had been regarded merely as a great highway for the carriage of produce, while its capabilities as an aid to production were either allowed to remain in the background or were omitted altogether from consideration. It was manifest from the reports of Mr. Gordon and Mr. Darley that the works required to make the river Darling permanently navigable were not warranted by the amount of traffic which could reasonably be anticipated. The question had therefore to be treated from a different point of view, and on this account it was referred to the Water Conservation Branch. In August, 1892, by direction of the then Minister for Works, surveys of lock-sites between Wilcannia and Menindie were put in hand, but about three months after operations were started the work had to be temporarily abandoned on account of floods.

In the beginning of October, 1892, the Minister for Works instructed Mr. F. W. Ward, and Mr. H. G. McKinney, Chief Engineer for Water Conservation, to visit the river Darling, and report on the whole question of the locking of that river and the utilisation of its waters. The result of the investigations thus authorised was the joint report, which was presented in due course to the Minister, and was ordered to be printed on 18th January, 1893.

The survey of sites, which had to be temporarily abandoned in December, 1892, could not, on account of the flooded state of the river, be resumed during nearly the whole of 1893. In December of that year the surveys were resumed on the Lower Darling, and in the succeeding month they were resumed on the Upper Darling. The work on the latter part was again stopped by a flood in March, 1894, and a month later work had to be stopped on the lower part of the river also.

In December, 1894, instructions were given for the preparation of plans of an experimental lock and weir at Bourke, and the necessary surveys and borings were at once put in hand, plans were subsequently prepared, and on 29th March, 1895, sanction was given for calling for tenders. On 18th April, 1895, tenders were opened, and that of Messrs. Kerle and Kerle for £18,868 11s. 8d. was accepted. Messrs. Kerle and Kerle did not make a start with their contract till 10th June, and they finally stopped work when a rise in the river occurred early in November.

The following extract from the Votes and Proceedings of Parliament shows the last step taken by the Minister in regard to the project for the construction of locks and weirs above Bourke:—

Construction of Locks and Weirs on the River Darling.—Mr. Sydney Smith moved, pursuant to notice, "That it be referred to the Parliamentary Standing Committee on Public Works to consider and report upon the expediency of constructing six locks and weirs on the river Darling from Stony Point to Brewarrina."—Debate ensued.—Question put and passed.

##### *Objects and advantages of the proposed works.*

The construction of a system of locks and weirs from Bourke to Brewarrina will have the following advantages:—  
1st.—It will conserve a large supply of water in the river channel which will be available for irrigation on both sides of the river.

2nd.—It will guarantee an abundant supply of good water to the town of Bourke, a question of which the importance was made manifest by the experience of 1885, 1888, and 1895.

H. G.  
McKinney,  
Esq.  
12 May, 1896.

H. G.  
McKinney,  
Esq.

12 May, 1896.

3rd.—It will afford permanent water carriage between Bourke and Brewarrina, and, while providing cheaper carriage, will save the cost of a railway to the latter place.

4th.—It will materially enhance the value of the Crown land bordering on the river between those towns.

5th.—It will increase the traffic on the Great Western Railway.

In regard to the first of these advantages, it is necessary to explain that in the driest seasons, when patches of irrigation are most valuable, the supply in the river, under existing circumstances, falls so low that the practice of irrigation to even a moderate extent would scarcely be allowable. It has also to be borne in mind that as a river like the Darling becomes low, the proportion of loss increases. Hence the construction of a series of weirs and locks has the double advantage, so far as irrigation is concerned, of conserving a large quantity of water, and at the same time increasing the available supply by diminishing the loss which otherwise would take place. The value of plots of irrigation on pastoral estates is steadily becoming better understood, and the necessity for irrigation to ensure crops on small holdings in the Western District is generally recognised. Approximately, the quantity of water conserved by the weirs from Stony Point to Brewarrina will be nearly one thousand millions of cubic feet—about 6,250 millions of gallons. This is equivalent to a foot in depth over nearly 23,000 acres.

The guarantee of a permanent supply of good water to the town of Bourke is one of the minor advantages of the project. Considering, however, the growing importance of that town, and the fact that on more than one occasion the quality of the water when the river was low was far from satisfactory, the improvement which will arise from the proposed works is well worth bearing in mind.

The provision of permanent water carriage between Bourke and Brewarrina will save the cost of the proposed railway from the latter place to Byrock. The length of this line would be 55½ miles, and the cost might be taken at about £140,000, but on this subject it will be best to have the evidence of the Chief Engineer of the Railway Construction Department. Regarding the cost of carrying goods over this length of railway the Traffic Manager of the Railway Department is the best authority. Regarding cost of traffic it may be stated that the average cost of haulage on the inland waterways of France is slightly less than one fourteenth of a penny per ton per mile. In England the cost of haulage on the inland waterways varies from one-seventh of a penny to one-twentieth of a penny per ton per mile. The record which gave these figures in the *London Engineer* added that steam haulage on canals costs half as much as horse haulage, and is twice as quick. Mr. Bartholomew, an English authority of much experience on this subject, ascertained that the cost of canal transport in England varies from one-fifth of a penny with horse haulage to one thirty-fourth of a penny for steam tugs carrying cargoes. The very small rate of fall in the river Darling, namely, about 3 inches per mile, is a most favourable circumstance so far as traffic is concerned. Comparatively few locks are required, and high lifts are unnecessary, so that the outlay is small in proportion to the length of river dealt with. As an instance of the effect of the canalisation of an occasionally navigable river, the case of the river Main, in Germany, may be mentioned. By the construction of works which gave a minimum depth of 6½ feet of water, or half a foot more than the minimum depth proposed in the case of the river Darling, the traffic coming to Frankfort increased from about 11,000 tons in 1885 and 1886 to 250,000 tons in 1887, and about 400,000 tons in 1888. The river trade here competes to some extent with the railway traffic, but notwithstanding that, the latter increased by 36 per cent., whilst the above-mentioned increase occurred in the former. Whilst in the case of a sparsely settled country like that bordering on the Darling, such rapid development cannot be looked for, it has to be borne in mind that in the western district two of the most potent factors in retarding settlement are want of cheap carriage and want of water, and that the proposed works will in an important degree meet these wants.

The accompanying map, showing the classes of tenure of the land within 3 miles of that part of the river Darling within the sphere of influence of the proposed works, gives a clear idea of the direct interest of the Government in the construction of these works.

The land included within the limits mentioned comprises the following areas:—

	Acres.
Unreserved Crown land within leasehold areas .....	81,139
"    "    within reserved areas .....	451
Reserves not held under special or homestead lease .....	131,051
Homestead leases .....	124,278
Alienated land .....	12,487
In the map the areas effected by the Bourke lock and weir are also shown, and they include the following:—	
Unreserved Crown land within reserved areas .....	1,200
Reserves not held under special or homestead leases .....	53,512
Homestead leases .....	3,088
Alienated land .....	8,300

The areas affected may all be classed as fertile alluvial land.

While the fifth advantage arising from the proposed works, namely, the increase of traffic on the Great Western Railway can be relied on to a certainty, its extent is difficult to estimate even approximately. In a report of the Railway Commissioners which was issued in 1893, a comparison was made between the railway revenue obtainable from 10,000 acres under wheat cultivation, and that from the same area used as a pastoral holding. Average conditions were assumed in both cases, and the conclusion arrived at was that the railway revenue derivable from cultivated land is more than thirty times greater than that from land used for pastoral purposes.

The conditions which will exist on the Darling when the works are complete will afford a much greater contrast than the average conditions assumed by the Railway Commissioners. The country in its natural state ranks low for pastoral purposes, whereas under irrigation the soil is much above the average in productiveness. The length of river directly affected by the locks and weirs from Stony Point to Brewarrina will be about 136 miles: but as the greatest obstacle by far to continuous navigation between Walgett and Bourke is the rocky bar at Brewarrina, the project now before the Committee is much farther-reaching in its effects than the locking of any other similar length of the river Darling. To make this clear it is sufficient to state that steamers from Walgett cannot cross the Brewarrina rocks till the height of the river on the Barwon gauge near Walgett is about 22 feet, whereas less than half this depth is sufficient for through navigation, irrespective of the bar at Brewarrina.

The great drawback to river traffic on the Darling, and to settlement on the river, is the uncertainty of transit. In times of flood, or even during any rainy period, the roads are almost impassable, and in the dry seasons, which generally prevail, food is scarce and expensive. These uncertainties render road traffic at all times expensive, and sometimes precarious. The river is frequently not navigable for long periods, and this naturally adds materially to the cost of river traffic, and renders it more or less untrustworthy. The elimination of this element of uncertainty in regard to traffic, and the provision at the same time of a permanent supply of water for irrigation purposes, will necessarily have a most important effect in inducing settlement and increasing production. It is, I think, well within bounds to expect that in the near future, there will be 100 acres of irrigation to every mile in length of the river, and this would mean an area of 15,600 acres for the part now specially considered. The direct effect of the increased production on the railway and river traffic arising from this would be very considerable, even if it be assumed that this irrigation would be merely an adjunct to pastoral occupation. The great value of irrigation for this purpose is well understood by some of our pastoralists. They have found by actual experience how important even a moderate area of irrigation is, when judiciously used, to assist in tiding over bad seasons, and to furnish the means for what is commonly known as "topping up" fat stock for the market. It is scarcely necessary to point out that such provision as this warrants heavier stocking of the whole of a pastoral estate, so that the indirect effect of the irrigation may be even more important than its direct effect.

The known capabilities of the Darling district suggest other directions in which important development may take place when a permanent supply of water and permanent river traffic are assured. The land near the banks of the Darling produces excellent fruit, and this fruit is ripe several weeks before the fruit grown in the neighbourhood of Sydney. Fruit-growing is extensively carried on with success in America in places certainly not more favourably situated than the part of the river Darling now under consideration will be when the locking is complete. The best fruit-growing districts in America have a climate similar in several respects to that of the western district of this Colony, and the opinion has been given by some experts that that district is better adapted than any other for producing fruit—especially citrus fruit—for export. These facts are stated here merely as significantly suggestive of future developments. It is not necessary for the purposes of the project now recommended to take them into account in any degree, but it is desirable to mention them as indicating developments which may take place with the aid of the proposed works, and which cannot take place without them.

In

In connection with this question of the increased traffic there is one point more which it may be well to mention. It may be urged that while the proposed works will bring increased traffic to the Great Western Railway, they form merely a part of a scheme for the complete locking of the whole of the river Darling, the effect of which would be to take away trade from this Colony. Even granting that this is correct, it has to be borne in mind that the construction of locks and weirs in an uncertain river like the Darling is necessarily a slow operation. Unless an exceptionally long period of low river occurs the completion of the works now proposed cannot take place for several years. Further up the river the sites as far as Walgett have actually been surveyed. It is natural to anticipate that the works of most importance to this Colony would be first taken up, and this would mean that the length from Bourke upwards to Mungindi and from Bourke downward to a distance of about 300 miles by river would be dealt with before any works would be undertaken on the Lower Darling. This shows that the question of permanent through navigation is too distant to have any weight as against present needs.

H. G.  
McKinney,  
Esq.

12 May, 1896.

*Nature and principles of the project.*

The conclusion arrived at after a very complete inspection of the river Darling was that owing to the very unstable character of the channel and to the great range of level from low river to high floods it would be unsafe to construct weirs which would interfere with or obstruct the waterway, and that it would be very expensive as well as unsafe to carry the works to above flood level. It is only right to state that while these conclusions were independently arrived at, and were published in January, 1893, in the report of Mr. F. W. Ward and Mr. H. G. McKinney, already referred to, practically identical conclusions were arrived at previously by Mr. George Gordon, M. Inst. C.E., on his inspection of the part of the river from Wentworth to Wilcannia. The works now proposed are in accordance with these principles, and the details while adapted to the circumstances of the case are designed on principles which are found to work successfully in other countries and particularly in France and America.

The weirs in every case consist of a series of timber shutters, which on an average are about 11 feet in length by 3 feet 3 inches in breadth. Each shutter, when erect, will rest at its bottom edge against a hardwood beam, set in solid concrete sill, and will be supported by an upright trestle and a sloping strut, both of wrought-iron. When the river rises to navigation level each shutter will be pulled forward till the sloping strut is disengaged from its rest, and will then be allowed to fall back flat on to the sill. During floods the whole weir will thus rest flat on the river bed, and the lock gates will be open, so that the only part of the work which will in any way obstruct the flow will be one lock wall. The presence of this obstruction will in every case be more than compensated for by widening the channel at the weir and excavating the bed to give a level sill. As shutter weirs of this class have not been used for greater heights than 14 feet, those designed are all under this height.

The size adopted for the locks, namely, 200 ft. x 37 ft. in the clear, is sufficiently large to take an average steamer and an average barge together. There are a few steamers trading on the Darling which cannot enter a lock of this width, but these are used chiefly, if not entirely, from Bourke downward. Even if the whole length of the river were furnished with locks of the size and weirs of the description proposed, these steamers would not be in a worse position than they are at present, as the weirs will be open when the river is navigable under existing conditions. In fact, the conditions for such steamers would be materially improved, as it would be possible to open the weirs in succession and allow them to pass down whenever the flow in the river would warrant this course. On the whole it did not appear in the first place that the circumstances justified the further outlay required for wider locks, nor in the second place that the construction of steamers of such width on the paddle-boxes should be encouraged.

*Estimated Cost of Proposed Works.*

Item.	Unit.	Quantity.	Rate.	Amount.
Excavation (soft).....	cubic yard	70,688	1/6	£ 5,301 12 0
„ (rock) .....	„	9,500	3/-	1,425 0 0
Concrete .....	„	32,350	47/6	76,831 5 0
Timber in lock gates, &c. ....	cubic foot.....	17,136	6/-	5,140 16 0
„ sheet piling .....	„	10,000	6/-	3,000 0 0
„ main piles .....	foot (lineal) .....	700	6/6	227 10 0
Wrought iron .....	cwt. ....	2,550	40/-	5,100 0 0
Cast .....	„	3,600	30/-	4,500 0 0
Pitching .....	square yard .....	10,978	6/6	3,567 17 0
Ashlar .....	„	3,696	11 -	2,032 16 0
Gun metal .....	lb .....	2,896	1/8	241 6 8
Lead in joints of hollow quoins .....	cwt. ....	12	30/-	18 0 0
Tarring (three coats) .....	square yard .....	3,960	1/-	198 0 0
Lock-keepers' cottages .....	No. ....	6	£250	1,500 0 0
Punts and wire rope .....	No. ....	6	£200	1,200 0 0
Coffer dams and pumping .....	„	„	„	5,000 0 0
	Total .....	„	„	£ 115,284 2 8
Supervision and Contingencies .....	„	„	„	5,815 17 4
	Grand Total .....	„	„	£ 121,100 0 0

The following plans are submitted for the information of the Committee:—

- (1.) An outline map of the colony, showing the sites of the proposed locks and weirs.
- (2.) A section, showing in outline the effect of the proposed works, and showing also the flood level of the river and the ground lost at the sites.
- (3.) A plan showing the tenure of the land to a distance of 3 miles on each side of the Darling River throughout the part directly affected by the proposed works.
- (4.) General plan of the Bourke lock and weir, which is the type on which all the other works are being modelled.

WEDNESDAY,

WEDNESDAY, 13 MAY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.  
 The Hon. CHARLES JAMES ROBERTS, C.M.G.  
 The Hon. WILLIAM JOSEPH TRICKETT.  
 HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
 JOHN LYONEL FEGAN, Esq.  
 THOMAS HENRY HASSALL, Esq.  
 GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Hugh Giffen McKinney, Esq., Chief Engineer, Water Conservation Branch, Department of Mines, sworn, and further examined:—

H. G.  
 McKinney,  
 Esq.  
 13 May, 1896.

2. *Chairman.*] I understand that the construction of the proposed works will throw open the Darling for navigation for 181½ miles above Bourke? Yes; with the assistance of the Bourke lock and weir.
3. The contract now being carried out near Bourke opens up about 25½ miles? Yes.
4. That is what is known as Kerle and Kerle's contract? Yes.
5. Will you supply the Committee with any information which you may have with regard to the law of riparian rights in this colony? I will procure that information.
6. Can you tell us what amount has already been spent upon the Darling in snagging? I will let you know that to-morrow.
7. What works have been carried out at Wilcannia and Menindie? The only work carried out at Menindie was the construction of a dam at the entrance to Menindie Lake. There was nothing done in connection with the locking of the river there.
8. The dam was intended to throw water into Menindie Lake? The water flowed into Menindie Lake when the Darling was in flood, and the intention of the dam was to keep it in the lake.
9. Was the dam a success? No; I believe not. I think you will find the matter referred to in the report presented by Mr. Ward and myself, and with which I will furnish the Committee. I will also let you have Mr. Gordon's report and Mr. Darley's report.
10. Is not the work at Bourke now suspended? They have started again with a view to carrying it out partly by day labour and partly by contract.
11. The work undertaken by Kerle and Kerle was exactly similar to that which is now proposed? Yes.
12. The two main reasons for the proposed work are to provide for navigation and to provide for irrigation? Quite so.
13. Does it not strike you that these two purposes are to some extent antagonistic, because, while a certain amount of water is required in the river for navigation, irrigation takes water out of the river? Yes; I am aware of that. The same question has cropped up in connection with the Indian canals, where in some cases canals that might have been made navigable were not made navigable because it was considered that irrigation should be the main purpose in view, and that navigation would interfere with that object.
14. With so small a rainfall as there is in the Bourke district, there must come a time when navigation and irrigation must stand in antagonism there? Undoubtedly.
15. Which then is the dominating purpose? I think that irrigation should be.
16. If you are forced to a conclusion, that is your statement? Quite so.
17. But you think that in general the locks will be sufficiently replenished by the water flowing from the catchment area to enable you to carry out both schemes? Quite so. I do not think that any difficulty is likely to occur within a considerable length of time; but a period may be looked forward to when it will occur.
18. Is it your opinion that the rights of the people who go upon the areas which will be rendered irrigable should be clearly defined, and that the rights to the water-way should be clearly defined? It would be advisable.
19. Can you furnish the Committee with a statement as to the amount of water that flows from the watershed above Bourke? I will let you have that information.
20. And how much of the rainfall runs through the river at Bourke? I will get you the discharge of the river at Bourke.
21. You propose by this scheme to create six big lagoons; have you the bank levels along each reach of the river that you propose to lock; will there be any opportunity for the water to escape? There is no place where that can occur. In fact an inspection proved very disappointing, because we could not find a single place from Walgett to Wentworth where we could let the water escape by a weir of moderate height.
22. *Mr. Humphery.*] Is a pumping station necessary for this scheme? It will be necessary to pump the water required for irrigation in every case.
23. *Chairman.*] What height will it have to lift the water in order to irrigate the various irrigable areas? I will get you that information. I can make out a statement as to what the lift will be at each weir.
24. You consider that you will be able to irrigate any land within 3 miles of the river? Yes, as a general rule; but it is not contemplated that under any circumstances the whole area within 3 miles of the river should be irrigated.
25. Will you tell us the total area within 3 miles of the river which you could irrigate if you had sufficient water? I will furnish the information.
26. With such storage arrangements as you propose to make by means of these weirs, how much land could you expect to irrigate along the 150 miles of river frontage? About 100 acres to every mile of frontage. That is not making allowance for the constant filling of the weirs from the flow of the river.
27. Knowing the amount of water that will pass into the weirs under ordinary circumstances, how much land would it be reasonable to put under irrigation there? That is the kind of question which will crop up one of these days if the contemplated Water Rights Bill is introduced. It will then be a matter for consideration, how much water can be allowed for any part of the river. The discharge at that point and the loss further down will have to be taken into account. The question is one to which I could not give an answer at once.
- 28.

H. G.  
McKinney,  
Esq.  
13 May, 1896.

28. How much will the productiveness of the district be increased? I consider that the whole of the water stored in the weirs might be used on the adjacent area, but I could not answer straight away as to what area could be irrigated with the water constantly flowing along the river. Of course I can take the discharge of the river and make out what area could be irrigated from the ordinary flow, distributing that area along the lengths enclosed by the locks, and some calculation of the kind will have to be made when the whole matter comes to be considered; but I am not prepared to give an answer straight away.
29. Can you make a calculation for us? Yes; I can give you an approximate estimate.
30. *Mr. Lee.*] Will the water conserved in the proposed weirs be sufficient to irrigate 15,600 acres? Yes.
31. Can the irrigable area be extended? Yes; but it will be necessary first to look into the question of the river discharge.
32. *Chairman.*] How will the riparian rights of people below the sites of the proposed locks and weirs be affected? If we diminish the quantity of water now going to them, they will, as the law stands, have a ground of complaint. Some authorities say that the ground of complaint is not tenable unless actual damage is proved.
33. *Mr. Wright.*] If your weir caused the river below it to run dry, in what position would the Government be? Well, the people below would have to prove that the weir had caused the river to run dry. If they could not prove that, they would have no grievance. As a matter of fact the existence of a weir would cause them to get more water than they got before.
34. *Chairman.*] A riparian right, as you interpret it, entitles the holder of land fronting the river to the same quantity of water, and the same purity of water as he would enjoy by the river taking its natural course? That is so.
35. Therefore any works which you carried out which prevented such enjoyment might render you liable to a prosecution for damages? Yes, and to expense if actual damage could be proved; but a summary of the law on the subject prepared by the President of the Land Court shows that some of the highest authorities in England hold diverse opinions in regard to it. The position we take up is that the people of Wilcannia will get more water after the weirs are constructed than they get under the present circumstances.
36. Have you any information with regard to the amount of traffic above Bourke, and as to how it would be affected by this scheme? I cannot give you such information at first hand, though I received a statement on the subject from Mr. Shainwald, of Messrs. Rich & Co., at Bourke. I think it would be well for the Committee to examine him themselves. Mr. Harper, the Railway Goods Superintendent, has also been through the district, and could give you information on this point.
37. If your scheme is carried out some of the boats now trading below Bourke will have to tranship their cargoes because they will be too large to go through the locks? Only a very few will be in that case. I will prepare a statement showing the size of the steamers now trading on the Darling.
38. Do you intend to keep the river open for navigation while these weirs are in course of construction? We do not intend to interfere with the navigation. We can make our arrangements in such a way as not to interfere with the navigation, and that is what we propose to do.
39. Will it be possible to construct these weirs without interfering with the navigation? The interference would be very slight.
40. Would there be any interference? I think that on the whole we might fairly say that we could keep the navigation open continuously. We can manage so as to make the navigation no worse than it is under natural circumstances.
41. Is the cost of keeping the river open for navigation included in the estimate of £121,100? That estimate covers everything.
42. *Mr. Wright.*] If there is only one steamer a day plying between Bourke and Brewarrina, can you so construct your weirs as not to interfere with it? Yes; we will stretch wire ropes across the river from bank to bank and lower the materials from them. I have only the plan in outline, and have not had an opportunity of going to Bourke since it has been commenced. These wire ropes can easily be disengaged if the river rises to such a height that they would come in the way of steamers.
43. Your weir will be practically a dam across the river? It will only be a dam up to the level of the bed of the river.
44. *Chairman.*] Will you describe the type of construction for these locks and weirs? The method of construction is shown on the plan before the Committee. In the first place, there is a lock on the right bank of the river, 200 feet long by 37 feet wide, while from the floor of the lock to the top of the side-walls will be about 15 feet. The lift from one water-level to the next water-level will be about 6 feet. One of the lock-walls is built in the bank and the other is built a short distance out into the stream. They will be composed entirely of concrete in the mass. Passing on across the river there follow bays, each 6 feet in width. These are intended to regulate the flow when the river is low. If there happens to be a very small quantity of water passing down we will drop boards into grooves, and thus keep it up to the proper level. Beyond the bays comes the weir proper, which falls down into the bed of the stream. The weir consists of a series of timber shutters, which in time of flood will lie flat on the river bed, but when the river falls below navigation level these shutters will be lifted in succession. The shutters will have a very strong framework in order to withstand the shocks to which they may be subjected, and there will be a moderately thick sheathing. There will be a mass of concrete let in from the bay to the left bank, rising up to the level of the river bed, and that will act as a sill for the shutters. The shutters will each be fastened to a framework in the concrete, and, when erected, will stand at an angle of 70 or 75 degrees with the flow. The framework will be made of timber. At the back of each shutter will be an almost vertical trestle, with a sloping strut to support the shutter. These will both be hinged, and there will be a large hook at the bottom of the inside of the shutter, which, being pulled forward, will disengage the strut and allow the shutter to fall.
45. What model have you followed in this construction? We have followed the style of what are called Chanoine shutters, with a modification introduced by Pasqueau. A similar arrangement is being used in the great Kanawha River, in Virginia, and in several rivers in France.
46. Have you seen these shutters at work? I have seen something of the kind at work, but not exactly the same thing.
47. *Mr. Wright.*] Will the construction be similar to that of the weir near Warren? No; that is an ordinary over-shot timber dam. There will not be the slightest resemblance to it.
48. How is any possible stoppage of work provided for in the estimate? It is provided for in the item "Coffer dams and pumping, £5,000."

THURSDAY, 14 MAY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERT.

The Hon. CHARLES JAMES ROBERTS, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.

JOHN LIONEL FEGAN, Esq.

THOMAS HENRY HASSALL, Esq.

GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Hugh Giffen McKinney, Esq., Chief Engineer, Water Conservation Branch, Department of Mines, sworn, and further examined:—

H. G.  
McKinney,  
Esq.  
14 May, 1896.

49. *Chairman.*] You have certain information to give us? Yes; in reply to a number of questions which were asked yesterday. In the first place, I was asked what amount had been spent in snagging the river Darling. The best information I can get on this subject is from a return which was called for by Mr. Hoskins in the Legislative Council in May, 1889, which shows the amount of expenditure up to that time to have been £80,111 11s. 1d. So far as I am aware, there has been no snagging done since, or, if any, very little.

50. Where was that snagging done? Almost the whole of it between Wentworth and Wilcannia.

51. Very little has been spent upon snagging above Bourke? Nothing at all, except a small amount for the taking out of a number of snags last year or the year before.

52. How much has been spent upon the length of the river which will be affected by the proposed work? I do not think more than £400 or £500 has been spent there. Yesterday I was asked to get a copy of the report made by Mr. Ward and myself, dated 18th January, 1893, but I find that your Secretary is already in possession of copies of that report. I hand in, however, a copy of a report by Mr. Darley on the locking of the Darling, and a report on the same subject by Mr. George Gordon, M.I.C.E., which appears on page 12 of the appendices to evidence attached to the First Report of the Royal Commission on the Conservation of Water. I was also asked as to the drainage area of the Darling, and the quantity of rainfall there. The joint report of Mr. Ward and myself contains a map showing that drainage area, and the Committee have already a large map showing the drainage area of the Murray, upon which appears a tabulated statement of the rainfall on each catchment area. I have lately received from Mr. J. B. Henderson, hydraulic engineer, the most recent returns of the Queensland rainfall, and I will compare these returns with former returns, and give the Committee the result within a few days. I was also asked about the capacity of the locks. The total capacity of the locks, with a 7-ft. lift, will be 106,344 cubic feet, or 664,650 cubic gallons. The quantity of water which will flow out of the lock when the lower gates are open will be 53,900 cubic feet. I have here, too, a statement showing the size of the river steamers in the western districts:—

The dimensions of the steamers trading on the Darling and Murray Rivers are given in the following tabular statement:—

Length, including rudder, in feet	No	Width, including paddle-wheels, in feet.	
		Minimum.	Maximum.
Not exceeding 67 in length	5	24½	30
Exceeding 67, but not exceeding 77	8	24	35½
Exceeding 77, but not exceeding 88	10	26	35½
Exceeding 88, but not exceeding 98	16	27½	37
Exceeding 98, but not exceeding 108	18	28½	35½
Exceeding 108, but not exceeding 118	14	31	36½
Exceeding 118, but not exceeding 128, which is the maximum	7	30½	37

The "Emily Jane" is 38 feet across paddle-boxes, and the "Florence Annie" is wider.

The number of river steamers which would not go through a width of 37 feet is inconsiderable, and not one of them, so far as I know, trades above Bourke, though a very broad steamer has come as far as Bourke.

53. Can you tell us how many boats are required to carry on the trade of the Darling? Mr. Shenwald would give you that information much more accurately than I can.

54. What sized boat would get through your lock? Any boat that was less than 37 feet, outside width.

55. And what length? None of them approach the length of the lock. I have here, too, a letter by Mr. Alexander Oliver, now president of the Land Appeal Court, published in the *Herald* of 22nd July, 1885, and dealing with riparian rights. Touching upon the same subject, I have brought a copy of the Progress Report for 1891 of the Water Conservation Department. At page 24 of this report appears a paper dealing with the matter. In regard to two of the other points referred to, namely, the proportion of rainfall at Bourke, and the amount of rainwater going down the Darling, I have not had time to prepare the information.

56. Will you find out for us the yearly evaporation at Bourke? Yes; we could ascertain that fairly well from Mr. Russell's evaporation gauges at Bourke. [*Witness here explained a working model of the movable shutters intended to be used in connection with the proposed weirs.*] Finally, I hand in a report of the Railway Commissioners, making a comparison between the amount of railway traffic that might be expected to arise from pastoral occupation, and the amount that might be expected to arise from agricultural occupation.

57. *Mr. Humphery.*] In arriving at your estimate of £121,000, did you consider the detailed cost of each lock separately? Yes.

58. How many locks do you propose to construct? Six.

59. Exclusive of the one at Bourke? Yes.

60. What do you estimate the Bourke lock will cost? We still adhere to our estimate of £19,500.
61. Have you made an estimate of the value of the work already done? When the contractors ceased work we went into the question as to which was the best way to continue the construction of the weir. I got Mr. Wade to see what materials were on the ground, and what work was required to complete the undertaking, and to give a statement of the position of affairs. Having dealt with the matter in detail, we came to the conclusion that we should be able to finish the work at our own estimate, or within it.
62. You estimate that £19,500 will be the total expenditure? Yes.
63. Does that include the usual percentage for supervision? Yes. We have a very good foundation at Bourke. It is one of the best places we have, so far as foundation is concerned.
64. What will be the annual cost of maintaining that lock? I have not got the figures with me now. I made a general estimate, and averaged the cost for the whole series.
65. Have you made a separate estimate of the cost of maintaining each of the seven locks? We have made a separate estimate for the Bourke lock, but not for the others.
66. Do you estimate that the cost of maintaining the other locks would be similar to the cost of maintaining the Bourke lock? No.
67. Which would be the most expensive of the seven locks? I think locks "4" and "5." There are good sites at Stony Point and Vincent's Rocks; but the two sites above that again are inferior.
68. In arriving at the estimate of £120,000 for the whole scheme, I suppose you prepared a detailed statement showing the cost of each lock? Yes.
69. Can you get those statements for the Committee? Yes; I will have them copied.
70. What would be the distance in a direct line from Bourke to Brewarrina? From 70 to 80 miles.
71. And from Byrock to Brewarrina? Fifty-five and a half miles.
72. The length of river which you propose to render navigable between Bourke and Brewarrina will be between 150 and 160 miles? Yes; from Stony Point upward.
73. How do you propose that the Government shall reimburse itself for the cost of the annual maintenance of this scheme? I consider that the indirect advantage which will be gained by the work to be the most important consideration. A demand will arise for Crown land there which at present is unsuitable for occupation in small areas.
74. Will you explain the altered conditions which will cause a demand for the Crown land there? Under present circumstances the state of the river is always very uncertain, and an owner of land in the district would scarcely be warranted in going to any considerable outlay to provide pumping machinery for an irrigation scheme; but if these locks are constructed he would always have an assured supply of water. Then, too, under present circumstances, the uncertainties of traffic are very great. This scheme would remove those uncertainties.
75. When you speak of the uncertainties of traffic, do you refer to the river navigation? Yes.
76. Do not the railway and the roads afford necessary facilities for traffic? No. There are frequently great difficulties in connection with road-travelling. In a bad season road-carriage is very expensive, because the roads get bad, and there is neither feed nor water for animals.
77. Do you think that a railway from Byrock to Brewarrina would give the facilities for traffic which you propose to give by this scheme? A railway such as you describe would give fewer advantages than the proposed scheme, and would cost more.
78. What would such a line cost? I have been informed that it would cost about £140,000.
79. As against £120,000 for your scheme? Yes.
80. But would not the Government be reimbursed for their expenditure on a railway by the earnings of the line? That is a point upon which Mr. Harper's evidence would be more serviceable than mine; but it should be borne in mind that two services would be rendered by a navigable river and only one service by a railway line.
81. You propose, by a series of locks between Brewarrina and Bourke, to gather the traffic at Bourke? Yes.
82. You do not propose to charge tolls at the various locks? That is a matter which has not yet been fully considered. I do not know what the policy of the Government would be on that point. I know that in France navigation is perfectly free, and no doubt the system they have pursued there has been of great benefit to the country.
83. Beyond the indirect benefit to which you have referred, you do not see any way of reimbursing the interest and annual cost of maintenance? No. There is the improvement to the value of the land to be considered, and the increase to the railway traffic.
84. How will the railway traffic be increased? The carrying out of the proposed scheme will bring more settlers into the district, and from that cause I anticipate a very considerable increase in the railway traffic.
85. You spoke yesterday about the possibilities of irrigation, supposing the river water were kept to a certain level. Was it your idea to establish large irrigation farms, or to afford facilities to owners of adjacent property to irrigate at their own cost? My idea was to afford facilities to adjacent landholders to irrigate at their own cost.
86. Have you taken into consideration the cost of irrigation schemes where the water used has to be pumped? Yes. I went into that matter in considerable detail when Mr. Ward and I prepared our report, though I have not considered it since. At the time we went into it as carefully as we could.
87. Do you know of any pumping scheme in Australia which has been a success? I know of several such schemes.
88. Will you mention them? The best I know upon a pastoral estate is that of Mr. Wills Allen, on the Namoi. He irrigates from 500 to 600 acres of land.
89. Did you ascertain what the cost of that scheme was? I think he spent about £3,000 upon his pumping-plant.
90. Do you know what the annual cost of maintenance is? No; but he informed me that he was perfectly satisfied with his arrangements. He has had the scheme at work for nine or ten years, and he is increasing his irrigated area.
91. Do you know of any other such scheme on a large scale? There are none in this colony on a very large scale. The Government are starting irrigation works at Wentworth. They are the first works of the kind that we have commenced.
92. How much has been expended there? The expenditure is only beginning, but I expect that we shall ultimately

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- ultimately expend between £4,000 and £5,000. We intend to pump from the Murray River.
93. Will you reticulate by means of open cuttings or by pipes? By open cuttings.
94. Will £4,000 include the cost of reticulation? Yes.
95. How many acres do you expect to be able to irrigate? The plant will be capable of irrigating about 1,500 acres; but we only estimate to irrigate 1,000 acres in the first instance.
96. What height do you lift the water? The average lift will be 25 or 27 feet.
97. Did you visit the Mildura works? I have been there several times.
98. You are quite familiar with that scheme? Yes.
99. Has it been a success, financially? No; though there is a place near by where a similar scheme has proved a financial success. At Lord Ranfurly's place, at old Mildura, there is a scheme which is managed in the proper way. He has a separate pumping-plant, and separate channels; and I have heard, on the best authority, that his place is very remunerative, and that he is highly satisfied with it.
100. *Chairman.*] He grows oranges? More lemons than oranges.
101. Have you ever seen the open drains which Messrs. Chaffey constructed at Mildura? Yes.
102. You know what happened with them? They were very badly designed in the first instance, and, when it was found that they did not carry the water properly, the defect was set down to crayfish. The impression I received at Mildura, however, was that the crayfish were very much maligned.
103. What height were Messrs. Chaffey lifting the water—75 feet, in three lifts? Some of the water was lifted higher than that. I think they had what they called a 90-ft. channel. I do not know any place in this colony where irrigation works which have been undertaken in a practical and business-like way have not proved successful.
104. *Mr. Humphery.*] We want instances where irrigation by means of a pumping scheme has proved successful? Nearly all the irrigation schemes I have seen in this colony have been shockingly mismanaged.
105. It is your opinion that irrigation schemes here have proved failures through the inefficiency of those in charge of them? Quite so. It is exceptional to find a properly managed irrigation scheme in this colony. I have only seen two such schemes connected with pastoral estates here, the one I just mentioned and Mr. Gatenby's on the Lachlan.
106. *Mr. Trickett.*] That is at Forbes? Not far below Forbes.
107. *Chairman.*] How is the irrigation in the valley of the Nile carried on? Almost entirely by gravitation.
108. What about California? There is a great deal of pumping done there, though there are also a great many gravitation schemes.
109. Are the pumping schemes, where water has to be lifted 30 or 40 feet, able to compete with the gravitation schemes? No, they are not, when the general conditions are the same.
110. Would it be possible, with the conditions which we have in this Colony, for the crops produced under a pumping scheme to compete with those produced under a gravitation scheme? Before a pumping scheme is adopted, care should be taken to see that the ground it is proposed to irrigate is suitable.
111. Can you tell us to what heights water would have to be lifted on our western rivers? The average lift would be about 35 feet. At Bourke you will find several people irrigating by pumping from the river. Mr. Wood is one of them.
112. Will you get for us a list of irrigation schemes at work in other parts of the world, where water has to be lifted from 30 to 40 feet? Yes.
113. *Mr. Humphery.*] In your statement you say that all land within 3 miles of the river will be benefited by the proposed works; will you explain why they will be so benefited? Well, on any estate in the back country, if water can be used to irrigate crops grown to provide fodder, the holding must be considered to be improved, even for pastoral purposes. Even in that way the construction of these works would benefit the land there.
114. The statement that all land within 3 miles of the river would be benefited rests upon the assumption that the owner of that land has a river frontage? Yes; the owner would require to have access to the river.
115. Should we not deal with this scheme simply as a scheme for improving navigation? I do not think that is a fair way of regarding it.
116. Must we look at it from two points of view: first, as to the direct improvement of the land fronting the river, by the facilities afforded for irrigation; and, secondly, as to the improvement of navigation? I think so. With regard to the distance at which land would be affected by the scheme, I might point out that it is the opinion of Mr. Wills Allen that the whole of his property, comprising 40,000 acres, materially benefits by his having 500 acres under irrigation.
117. *Mr. Black.*] Would we be justified in recommending the proposed expenditure simply to improve the river navigation? Looking at the scheme merely as one for opening up the river to navigation, I do not think the expenditure would be justifiable.
118. *Mr. Humphery.*] Have you been over the country between Byrock and Brewarrina? I have been over some miles at each end, but I have not been over the whole length.
119. Do you know if the soil and climate there are suitable for the production of wheat? About Brewarrina there is land which would be suitable for wheat, but I think that between the two places named, a good deal of the land is liable to floods.
120. You say that the carriage of the productions of agricultural occupation may be regarded as thirty times more valuable than the carriage of the production of pastoral occupation, so far as the railway earnings are affected? I have quoted that opinion from the Railway Commissioners' Report.
121. Do you think that the land which could be made available for agriculture by an irrigation scheme would be suitable for the production of wheat, and that wheat could be grown at a profit? Mr. Ward made considerable inquiries into that question, and he came to the conclusion that wheat could be profitably grown there. I do not think, however, that that would be the class of production generally gone in for. I think that in the first instance lucerne and wheaten hay would most likely be produced.
122. Would not that be for local consumption? At the outset it would be entirely for local consumption.
123. That would not contribute any traffic to the railway? Not from that production; but the carrying capacity of the runs in the district would be materially increased, and that again would increase the railway traffic.

124. For what periods has the Darling been unnavigable at Bourke? In 1885 it was not navigable for fifty-two weeks; in 1886, for twenty-two weeks; in 1887, for fourteen weeks; in 1888, for forty-one weeks; in 1889, for twenty-eight weeks; in 1890, for two weeks; in 1891, for one week; in 1892, for twelve weeks; in 1893, for one week; in 1894, for twelve weeks; and in 1895, for forty-four weeks. The river for the period commencing with 1890 was at a high level for a longer time than is usual since records have been kept, and the statement I have just made gives a more favourable idea about it than would be given by longer records. In a letter which I have had from Mr. Shainwald he says "We have had no navigation for ten months prior to February, 1896."

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125. I suppose that the scheme now under consideration is merely a small instalment of the expenditure which will be necessary in order to make the whole length of the Darling navigable? Quite so, though it may be regarded as a scheme complete in itself. It will add a very extensive area to the district which contributes traffic to the railway at Bourke. It will make the river navigable to a considerable distance above Brewarrina, and that will have a material effect in drawing traffic from Queensland.

126. Have you estimated the cost of making the entire river navigable? Yes; an estimate is given in the report prepared by Mr. Ward and myself. We there estimate the cost of rendering the river navigable from Walgett to Wentworth would be £1,226,000.

127. What is the distance from Bourke to Wentworth? Practically 900 miles.

128. That is your estimate of the total cost of rendering that portion of the river navigable? Yes, from Walgett to Wentworth; my estimate was made out at the beginning of 1893, and I have no doubt that the work could now be done for less.

129. We are to understand that the proposed works will be of a local rather than of a general character? Quite so.

130. *Chairman.*] What would be the cost of fixed weirs? Well, my opinion is that fixed weirs would have a great effect in changing the course of the river. I think that the rocks at Brewarrina are to a great extent responsible for Cato Creek. The river would make its way across the lowest bend in the neighbourhood. In going down the Darling on one occasion, I had an excellent opportunity of seeing how new channels were made. In places I saw the river just beginning to flow across the necks of bends; in other places it had made a cutting 4 or 5 feet deep; and in other places the steamer went through the cuttings which had been made. In some places these cuttings were due to so slight a cause as a fallen tree.

131. Does this appear to you to be reasonable for a storage reservoir? It is the best available under the circumstances.

132. Is it likely to prove satisfactory? I think so. In the first place, it is the best available; and in the second place it is the general experience that there is no tendency for alluvium such as that of which the valley of the Darling is composed to silt up above a weir. One of the most objectionable points about weirs is that rivers are liable to silt up above them. In this case there is not that danger.

FRIDAY, 15 MAY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHREY.  
The Hon. CHARLES JAMES ROBERTS, C.M.G.  
The Hon. WILLIAM JOSEPH TRICKETT.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
THOMAS HENRY HASSALL, Esq.  
GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

John Harper, Esq., Goods Superintendent, Department of Railways, sworn, and examined:—

132. *Chairman.*] What is your position? I am Goods Superintendent in the Railway Department.

133. You are aware of the proposal before the Committee? Yes.

134. And you are prepared to give some information in regard to it? I am prepared to answer any questions, as far as my knowledge is concerned. I have prepared no special information.

135. *Mr. Trickett.*] You are aware that this is a proposal to construct six locks and weirs on the River Darling, from Stony Point to Brewarrina, at an estimated cost of £120,100; I suppose your evidence is submitted with regard to the business aspect of it—as to what revenue is likely to be derived? No; I cannot give that evidence. My purpose here is to explain that as far as the Railway Commissioners whom I represent in this matter are concerned, they regard any improvements of river communication from the north of Bourke as tending to the development of trade, and as being in the general interests of the community.

136. That being so, you come here from the Commissioners to show that it would be an advantage to the colony if the streams lying north of Bourke were to be made efficient waterways, to act as feeders to the railway line? That is the object.

137. Would you state to the Committee in what way you think that benefit would accrue if the river were improved? We find under the existing natural conditions of the river that a very large portion of the produce of the district lying immediately to the north of Brewarrina, and north and east, almost as far as Collarenebri, finds its way to the river, and thence to the Bourke railway station. Given a favourable condition of the river, we know that the rates obtained by that waterway are so low that they must operate in the interests of producers.

138. What are the rates of carriage now by this route? When I happened to make an investigation into a matter entirely outside of this subject a short time since, I found that the prevailing rate between Brewarrina and Bourke—150 miles—was 12s. 6d. a ton.

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139. That is by punt or steamer? By steamer. I also find that during the season 1894-5 there were 3,600 tons of wool, or, roughly speaking, equal to about 20,000 bales, delivered by that route at the Bourke railway station. We have also found in our experience that when there has been an exceptionally good river small steamers have been able to proceed as far as Mungundi, on the Queensland border, and deliver produce at Mungundi, and bring wool to Bourke. We have also found more frequently that steamers were able to get beyond Walgett to Collarendabri and deliver supplies there. The steamers get the great bulk of the Walgett traffic, amounting in 1893 or 1894 to 12,000 bales of wool, which was shipped at Walgett. That wool was brought down to Bourke and sent to Sydney. If this state of things prevails with the difficulties of navigation as the river exists now, we think that if the river were improved the people north of Walgett would send their wool down the river to Bourke, that being the cheapest route, and thence by railway to Sydney. We are forced to the conclusion that river carriage must be necessarily cheaper than either road or railway carriage.
140. You state that this traffic would come by river if the river was always navigable;—where does it go to now? Last year it was carried at a much greater cost by land. A great deal came into Narrabri. This wool season has been the first for five years when there was no practicable river.
141. Then if the wool still comes to the New South Wales railways, whether the seasons are dry or wet, where will the advantage to the railways come from? It must come if the people to the north are able to utilise that stream when it is available, and do not use any other except when it is not available.
142. It will give increased intermediate railway haulage? Yes. So long as that river is navigable, so long will the people utilise it. While the rate from Narrabri to the seaport is £3 10s., the rate from Bourke is £4 per ton.
143. Therefore the Department gets the increased tonnage? Yes; but still the users of the railway are content, as indicating the difference between road carriage and river carriage, to pay the higher rate. Unfortunately, we know what the effect of upstream navigation is. We know that, as a matter of fact, traffic has been delivered at Wilcannia, and has been offered as far as Bourke, the charges being Wilcannia 30s. a ton, Bourke £2 a ton.
144. From where? From Goolwa, in South Australia. Very little traffic from the Upper Darling ever finds its way to Echuca. The great bulk of it goes to South Australia.
145. That being so, if the river is made navigable from Bourke to Brewarrina and further north, is there not a danger that when once the goods get on to the steamer they would be carried away to another colony? No; we do not think that, for the reason that during the last few years no wool from the north of Bourke has been shipped from Bourke below, while as far down as Louth the traffic has come up stream to Bourke. Of course there are conditions controlling the wool traffic. It may be that Sydney is a more favourable market, and advantages in that direction will sometimes induce people to pay higher rates than they otherwise would.
146. Taking the two means of transit to the shipping port, you think the goods are more likely to be transhipped at Bourke than taken and sent down the river to another colony? That is our experience. In the year that I have quoted, of the 20,000 bales which we sent away not a single bale passed Bourke.
147. Seeing that there is a possibility of advantages in the way of transit if the navigation of the river is improved, is it not one of the very first considerations whether the cost of providing that transit should not in some way be compensated for to the Government? That is my distinct personal opinion; but in this matter I am not authorised to speak for the Commissioners.
148. Mr. McKinney, in the paper which he read yesterday, quotes the case of France, where the charge for haulage on the canals is about 1-14th of a penny per ton per mile; in England from 1-7th of a penny to 1-20th of a penny; in Frankfurt he says that 400,000 tons are being carried on the canals—400,000 tons at 1-8th of a penny per mile come to £208 a year;—do you think it is desirable from a monetary point of view to go to this huge expense to make these rivers navigable? I do not know whether that would be the only consideration; there may be other considerations.
149. But looking at it purely as a commercial matter, could you say that it would be desirable? I do not know that those rates could be considered applicable here under different conditions.
150. You mentioned a charge of 12s. 6d. for 150 miles, that is a penny per ton on the present railway? This is on deadweight carriage; I do not know whether those other charges are on the same scale.
151. At one penny per ton it would take a tremendous lot of carriage to pay the interest? I think that the boat carriage would certainly stand more than 1-8th of a penny.
152. It has been pretty strongly affirmed on several occasions that this project would not be justifiable entirely from the traffic point of view;—do you agree with that? No; it opens up rather a broad issue.
153. I will read this sentence from Mr. McKinney's paper:—"It was manifest from the reports of Mr. Gordon and Mr. Darley that the works required to make the Darling permanently navigable were not warranted by the amount of traffic which could 'reasonably be anticipated';—do you agree with that? No; but I would explain myself. It means this—that the people of that district are entitled to cheaper communication with ports of shipment for their produce or with a market. The question is how to get it. There are various railway proposals which I need not speak of just now. Assuming that it was decided to build railways there, the users of the railway would be expected, in common with others, to pay interest on the capital cost as well as working expenses, so that if a method can be adopted of providing a cheaper means of communication for the people there, who require better means of reaching a market, I should imagine on broad general grounds that the cheaper method will be the better one.
154. But you cannot have a river or canal to every man's door, so that you would want roads to the river, and would not that be an additional expense to the Government? I do not think so. As a matter of practical experience there are roads already to the principal shipping points. The woolsheds and stations are on the river, and practically they would have the means of carriage at their doors.
155. Have you personally visited that country? Yes; I have been up the river as far as Brewarrina, and I have followed the river as far as Walgett.
156. What were you there for? Other matters connected with the Commissioners' interests.
157. Did you inquire into this project whilst there? No. I was called upon to report upon a proposed railway extension to Brewarrina.
158. When you were at Bourke, did you see the weir that had been commenced there? I did.
159. Would you care to give an opinion as to the size of these proposed weirs? No; I prefer not to express an opinion on that matter.

160. You merely state in a general way your impression as to these navigable streams being desirable feeders to the railway? My desire is to place before the Committee the experience that we have had, that is, that when there is an available river it is used, notwithstanding the greater distance.

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161. You speak of the experience in the Department,—what experience have the Department had? Ever since the line was opened to Bourke in 1882.

162. In any other part of the country? We have also had it at Narrabri.

163. In no other river except the Darling? Unfortunately we have had too much experience of the Murrumbidgee. Nature has provided there what is wanted on the Darling.

164. *Mr. Lee.*] I suppose that the 20,000 bales of wool that came down the river were pretty nearly the whole produce of the district? It represented at that time the produce from the east of the Culgoa. Everything between the Culgoa and the Warrego came down by road. Wool coming from the east of Collarendabri, and the east of Walgett, found its way into Narrabri. To what extent it may be controlled by permanent water being given to Walgett I am not prepared to say.

165. If there were permanent navigable water from Walgett to Bourke, could that 20,000 bales be largely increased? I think it would. It is very hard to say what kind of vessels they would employ under those circumstances. It will take probably four steamers from Walgett to Brewarrina, where the wool is transhipped, to represent one full load to Bourke. About 400 bales are being carried from Brewarrina to Bourke. The steamers are small and of slow speed. They have to tranship the wool at Brewarrina and cart a mile to get over the bar.

166. Your statement is made on the presumption that there would be no competing railways? Yes.

167. But if a railway is extended from Narrabri to Walgett, or by way of Mudgee to Walgett, would it not interfere? It would be a matter for the serious consideration of the Committee which is the better means of serving the community and the less costly.

168. What is the distance from Walgett to Sydney, from Bourke to Sydney, and from Walgett to Newcastle? The distance from Bourke is 50½ miles, and the rate per ton for wool is £4. The distance from Walgett to Sydney is 476 miles, and the rate for wool from there would be more than the rate from Bourke, but I cannot tell what conditions would control it. The distance from Walgett to Newcastle is 376 miles.

169. Therefore, the rate on wool to that port would be considerably less than it would be from Bourke to Sydney? Yes; but I have been trying to point out to the Committee that notwithstanding that, we find that wool has found its way *via* Bourke to Sydney.

170. If the wool rates are based on the same scale, the rates from Walgett to Newcastle must be considerably less? The rate from Walgett to Newcastle and Morpeth is £3 per ton.

171. That is £1 per ton less than the Bourke rate? Yes.

172. What would be the steamer rate from Walgett to Bourke per ton? I think that in 1893 it was carried for £1 per ton.

173. If £1 per ton were added, that would be £5;—that would still show a large margin in favour of the direct route to Newcastle? Yes.

174. I should like to place this position of affairs before you: In the event of this scheme being carried out, and affording permanent navigable water, and in the future it is determined to extend the railway to Walgett, what position would you be in at Bourke as far as the Upper Darling traffic is concerned? I do not know. That would be a matter for the Railway Commissioners to administer as a question of policy.

175. I think you misunderstand me;—supposing that eventually the railway is taken to Walgett, is there not an extreme probability of the traffic being divided—one portion going down the Darling, and the other by the railway from Walgett to Newcastle? No doubt.

176. Is it not a fact that the port of Newcastle is being very largely improved to admit large ships to take the produce of the north and north-western country? I have heard that it is so.

177. Is not Newcastle the natural port for the north-western country? May I answer that question by another;—is not the water-way the natural means of carrying heavy produce.

178. I should like an answer to my question? I would rather not offer an opinion on that point. I consider it a matter of policy.

179. Could you show the Committee whether and how far the Victorian rebate system extends into the country proposed to be served by this water-way? The Victorian rebate of 46 to 61 per cent. starts a little west from Angledool, and it may be said to affect the country south of the Queensland border from Mungundi, following the river to Walgett, thence south to Nugal, then to Carinda, then by a line parallel to the Barwon River, as far as Tarcoola, then nearly parallel to the Darling River almost to Wilcannia, then picking up the 144th parallel of latitude, down to the Lachlan junction. All the country in the north-western districts of New South Wales is affected by the reductions in question.

180. How long have these rebates been in force? Ever since 1880.

181. And has it, to your knowledge, affected the trade—has it diverted it from our railways? No; by dint of hard fighting we have managed to secure the greater portion of it.

182. If any traffic were diverted, to what station in Victoria would it go? As a matter of fact, I may state that very little of that traffic ever found its way to Victoria. The Darling traffic goes to South Australia. The Murrumbidgee traffic is the traffic which finds its way to Victoria.

183. If it found its way to South Australia, the traffic would derive no benefit from the rebate rates of Victoria? South Australia has a similar system.

184. Then we have both those colonies fighting against New South Wales? The mileage over which the traffic is carried in South Australia is comparatively small, but their rebate percentages are equal to those of Victoria.

185. Have you noticed whether, when the Upper Darling was navigable, that much traffic went to South Australia? No; not from above Bourke. As I have said, we have held our own. Traffic which has been carried as far as Bourke by river may have been redistributed, but it is exceptional for carriage to go beyond Bourke.

186. Is it within your knowledge that the Sydney merchants are shipping goods to South Australia, and thence to Bourke, at considerably less cost than you can carry them by railway? Yes; but not always to their own satisfaction.

187. Is it not a fact? It is a fact.

188.

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188. You say that it has not been entirely satisfactory? Not judging by our experience.
189. Has not the trade, without mentioning the upper trade of the river, been continuing for some years, and is it not now continuing? Yes.
190. Therefore, it must be satisfactory in the aggregate, although occasionally shipments may not be? Yes.
191. That sort of business is now going on, and seriously competes with the railway? Yes. But pardon me for saying this. I have pointed out that if Bourke has distributed goods received there they have gone up stream. If communication is open to Walgett, whatever proportion comes to Bourke will reach both Brewarrina and Walgett. I mention that to indicate that if Walgett were connected to-morrow by rail it would be as important to control that distribution as it is now.
192. But supposing the river were made permanently navigable, would not the traffic now carried on profitably between Bourke and Sydney be carried on to Walgett? I do not think so, if a proper method were adopted of charging for the services rendered by the improvement of the river.
193. If the river were made navigable would not the traffic which has to stop short of Bourke now be carried on to Walgett? I do not know, as far as that is concerned, that it would block it to any great extent, because at the present time they have from Bourke to Brewarrina a light class of boat capable of navigating the upper reaches of the river. If a boat can get to Bourke it can generally get to Brewarrina.
- 193½. If the trade can be carried on by means of the river to a point at Bourke profitably, because of its lower rate than the railways, it is evident that the traffic will be continued to Walgett, the railway thus being deprived of it? If, as I have already stated, we find that the whole of the wool traffic under the conditions you have mentioned finds its way to Bourke, then to Sydney, if an improved river were given would that alter the conditions.
194. I was going to ask that question? My opinion is that it would alter it in favour of transit to Bourke.
195. But if the traffic towards Walgett increased, would it not of necessity follow that there would have to be return loading for the boats and that the rates would be even lower than they are at present? Where the improved water was, certainly.
196. Therefore, would it not, instead of being a feeder to our line at Bourke, probably be a sucker? We do not think so. We think this: If public money is spent in the improvement of that river such dues should be levied as will pay interest on whatever money has been expended.
197. Do you anticipate that it would increase the number of stock? I cannot say what the conservation of water and its distribution might do.
198. But you rely entirely on the extra traffic that might be brought? I do not anticipate any great increase in the stock traffic, because we find that the mileage from Bourke to Sydney is about as much as stock will bear.
199. So long as you are not threatened with another railway to compete from some other point, you are tolerably clear that there will be a very large increase of traffic by this water-way? I am clear that the improvement of the water-way would give New South Wales the control of the traffic from Bourke, even assuming that the railway were built to Walgett.
200. Which would be an invaluable route in time of drought, and also in times of heavy weather? Yes.
201. Are you authorised by the Commissioners to make any definite statement to the Committee, that it appears to them that there should be some sort of auxiliary like this, to enable them to command the traffic? No. I am authorised to say that they regard any improvement of the internal waters in the direction proposed as a very desirable thing.
202. *Mr. Clarke.*] What benefit would it be to the country at large to have this system of locks and weirs carried out? There is no doubt that the people in the district between the Queensland border and Brewarrina are entitled to easier communication with Sydney than they have at present by road. This seems the cheapest method of affording it, and to give them the cheapest carriage is the best thing they can have.
203. I believe it is intended to utilise the waters of the Darling for irrigation purposes? Yes, so I understand.
204. What would be the principal article of produce on the river? At present it is wool, stock, and station supplies.
205. Are you of opinion that stock could be driven down the river to Bourke cheaper than by travelling from Brewarrina? No doubt if good water is obtained, but the whole of that country is splendid travelling country for stock.
206. What is the population of the Brewarrina district? It is officially returned at about 2,000.
207. Where do they get their supplies from? From Bourke.
208. If this system is carried out, would it not involve extra expense to the people of Brewarrina? No; I do not know what the existing rates are, but they were down as low as 12s. 6d. This was under the conditions of an uncertain stream. Given a certain stream and the possibility of better boats, a cheaper and a more improved service may be formed.
209. Can you state whether this is the commencement of a system to be driven further down towards Wentworth? No; we have no idea about the policy. I have come here to tell as nearly as possible what the effect may be on our traffic.
210. You cannot say whether it is intended that this system should be carried further? No. I am not aware that the Commissioners have been consulted on the matter.
211. If a light line of railway were made from Brewarrina to Byrock, would that not be more convenient and less expensive to the people in that particular neighbourhood? The estimate of cost is £140,000, I have already mentioned that the river is now the means of transit between Bourke and Brewarrina. Assuming that we get a good river, and traffic carried at a reduced rate, the total revenue on that line would not pay more than the working expenses. That is assuming that we get the whole of it. The river carriers, under normal conditions, charge 12s. 6d. a ton; but if they had to fight against the railway it would be much less. If a steamer and barges can carry 300 bales for 12s. 6d. and make the round trip in five days, it is not a bad transaction. The capital cost of a steamer and two barges is about £2,500, and the weekly wages are £15.
212. What is the distance from Brewarrina to Byrock? Sixty miles by road.

213. Would it not be the means of the people in the neighbourhood of Brewarrina having to pay extra railway carriage to Bourke than water carriage from Bourke to Brewarrina? They would have to do that if the railway were built. They would have to pay extra carriage between there and Byrock.

214. I suppose the traffic is carried by team? No, by river. The team rate is almost prohibitory. Last year it was £2 a ton as against 12s. 6d. by river.

215. Do you think it would be a good thing for the whole district if this system of locks and weirs were carried out? I think so from a traffic point of view. But underlying the whole thing is the larger question of conservation of water.

216. *Mr. Fegan*] Had you seen the scheme before us before you came here this afternoon? No.

217. You are aware that this scheme has two objects—one the utilisation of the land by irrigation, and the other affording better transit? Yes.

218. If the scheme is carried out, do you not think it will make a large tract of land, from which we get nothing at present, fruitful, and be the means of giving greater trade to our railway at Bourke? That is my firm conviction.

219. What is the character of the soil? You could not imagine richer soil than this anywhere in the world.

220. Yet it is like a desert for want of water? Yes.

221. There are very few people settled on it? They are principally homestead lessees or pastoral tenants. When I was there—in a time of drought—the general impression was that the lessees would have to abandon their holdings.

222. Yet thousands of pounds have been spent to make the holdings a success? Yes.

223. Do you not think, then, that the project is a very good one? I view it, from my personal knowledge of the back country, as an extremely valuable idea.

224. I suppose the people there desire a system of irrigation to be carried out? That is the general impression in the back country.

225. You say that the soil is very rich there? Yes.

226. And if a scheme like this were carried out it would induce people to settle on the banks of the Darling? I am not prepared to offer any opinion on irrigation. Almost every year enormous quantities of fodder and other produce, which I am sure the soil is capable of producing if it had moisture, are carried to Bourke at great cost to the people.

227. Do you think that if the scheme were carried out it would induce closer settlement? I think so.

228. Therefore that would mean a greater amount of trade to be done, not only on the river, but also on the railway? Yes.

229. I suppose you have some idea of the extent of the Crown lands about there? I know that most of the land is leasehold.

230. I suppose you would not give an opinion as to whether a toll or tax should be put on the river traffic? Personally, I think it would be only a fair thing, just as harbour and other dues are imposed.

231. The charges would be heavier on this side of Bourke? Heavier in proportion to the extent of river used.

232. You would impose tolls with the object of forcing traffic on to the railway line? Not necessarily for that, but to get a fair return for the money expended.

233. The line from Bourke to Brewarrina would cost £140,000? That is about the estimate.

234. That expenditure would only do one thing—afford means of transit—there would be no irrigation in connection with it? If the rates were cheaper the people would prefer the river.

235. The time has arrived when something should be done with that great area of land by means of irrigation? I should like to see it done, and I think it is time that the magnificent internal streams which we have should be properly utilised.

236. I suppose you know the rainfall in that district? The average is 19 inches taking it all through.

237. *Mr. Hassall*.] You are only here to give evidence as to the effect which the locking of the river will have upon the railway traffic? That is all.

238. Where would you expect the traffic that you say would be attracted to Walgett to come from? I think the area from which it would come would extend to Queensland if we had a permanent river to Walgett. There would be a class of boats put on the river which would reduce the freights considerably.

239. Do you think you would attract traffic from the St. George district? I think so.

240. Do you not think it extremely probable that when the railway is extended to Moree, the bulk of the traffic from Mungundi will come into the line there? We hope so; but at the same time we place great hope, not upon the traffic to the north-east, so much as the traffic due north.

241. The traffic you depend upon would be traffic coming down from the Narran, Bokhara, Birrie, and Culgoa Rivers? Yes.

242. That would concentrate at Brewarrina? Yes.

243. The traffic from the Balonne River would naturally gravitate to Brewarrina? Yes.

244. Then the question arises that with a full river do you think it would follow the course of the river right away down? It is very hard to predict what might happen. Our experience is that while every year up to last year they have had navigable rivers, no wool has passed Bourke.

245. Do you think that the locking of the river will be preferable to running a line of railway from Byrock to Brewarrina? I think so. If a railway were made from Byrock to Brewarrina it would be a question of freight. We should simply have to fight the river. I need hardly say that if the line were made and we had to pay interest on £140,000, the cost of maintenance and working expenses, the rates on the railway line would not compare favourably with the rates on the river. The railway would have to be maintained in competition with the natural stream, which during the last five years has carried practically the whole of the traffic.

246. *Mr. Black*.] The Government would get the profits from the railway, but they may not get any profits from the river? We should not get the profit, because we should not get the traffic.

247. *Mr. Hassall*.] I understood you to say that you had a trip down the river? Yes; between Byrock and Brewarrina.

248. Did you follow the river for any distance? Between Bourke and Brewarrina, and between Narrabri and Walgett.

249. From what you saw of the country, do you think that the land would be used to any extent for irrigation farms? I could not say. If it were it would be to grow lucerne and fodder crops.

250. You would not expect any additional carriage on the railway from what would be grown on the river? Yes; instead of losing 40 per cent. of the wool, which we did last year, it might be saved if we had fodder crops.

- J. Harper,  
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251. If crops were grown on the banks of the river, do you think they would truck it on the railway to any other place? I may mention my own experience. I paid 14s. at Brewarrina for a bag of chaff. I think any one would be glad to sell a bag containing less than three-quarters of a hundred weight of chaff at that price.
252. But if fodder is wanted to keep stock alive, you naturally suppose that it would be produced there? Yes.
253. I presume you anticipate some benefit to be derived in this way, that instead of the sheep dying on the run they will be conveyed by rail? Yes.
254. You are aware that artesian bores have been put down in the country which water a large extent of land, and the same effect would be produced by these locks? I do not know what is going to arise from the river being locked and water being distributed in ara-branches and channels. I know what has arisen from a small weir being formed on the Lachlan. The Willandra Billabong is now a very different thing from what it used to be when I first knew it. The people are now asking to have the weir made higher to send the water further back.
255. Would you expect the traffic between Walgett and Coonamble to drift into Walgett? No.
256. You rely on an increased traffic immediately to the north of the Darling? Yes.
257. After due consideration the Commissioners have come to the conclusion that that would be a profitable work to carry out? They are not in a position to judge whether it would be profitable, but they think it is a work which they might safely recommend without any figures to support it beyond our actual experience of what the river is doing.
258. I presume you would not advocate the locking of the river below Bourke? That question has not entered into consideration. The Railway Department have advocated the locking of the river as far as Wilcannia.
259. *Mr. Roberts.*] Is there a very large traffic through and around Brewarrina in that country to the north of the Darling? Yes; Brewarrina is the centre of a splendid district. It is some of the best country in New South Wales.
260. Do large quantities of wool come down to Brewarrina? Yes. Of that 20,000 bales which I spoke of, 12,000 or 14,000 came into Brewarrina.
261. Do you think the time has arrived when some improved means of transit should be afforded to the people out there towards the Queensland border? I think so. One reason is that the rates vary according to the state of the river from 12s. 6d. to 30s. a ton. This is brought about by the uncertainty of the state of the river. If you can make the conditions equal and certain it will be a very great benefit to the people.
262. And you think that one of two things should be done, that either the navigation of the Darling should be improved or a railway should be constructed from Brewarrina to a point on the Great Western Railway? I would not like to say that. I should not like to recommend a railway that would not offer an immediate prospect of paying. If a railway were made, we should find the river a very formidable competitor when attempting to pay interest on capital and working expenses.
263. Are you in a position to say that that estimate of £140,000 has been gone into faithfully and accurately? I think so.
264. In very level country, such as that of the surveyed line from Byrock to Brewarrina, would it not be a fair thing to assume that the line could be constructed for £1,500 a mile? I could not say. That is an engineering question.
265. If this scheme now under consideration were carried out, would it facilitate the transit of wool to another colony? I do not consider so.
266. Is it not a fact that wool has been taken from Bourke to one of the neighbouring colonies when the state of the river would permit it? Yes; that was in the years gone by.
267. How long ago? I do not think any wool has come from Bourke for the last five years.
268. What is the point nearest to Bourke from which wool is now taken in large quantities to another colony? Winbar, 150 miles below Bourke. Next above that come the Dunlop and Courallie station, 140 miles from Bourke. The wool from there comes to Sydney, *via* Bourke.
269. If this scheme is carried out, will the traffic of the Great Western Railway be enlarged? I think it would. Traffic would come from Queensland, which we do not get, and which we shall not get by the Morce station.
270. Where does it go to? It goes to Queensland by St. George. That is a subsidiary consideration. The real consideration is the serving of the people in that large district, one of the best in New South Wales, but eminently unsuitable for railway purposes.
271. It is not so well adapted for railway construction as the route to Bourke? No; there are a great many water-courses, which in times of flood open out and cover the country from the Warregal to the MacIntyre, and which would render railway construction very expensive.
272. I suppose you frequently have to visit Bourke on official business? Yes.
273. Does Bourke suffer from a poor supply of water in dry seasons? The last time I was there the water was very indifferent. When the Darling gets low the water is inclined to become brackish.
274. Then one important feature of the scheme would be that an abundant supply of water would be given to the people at Bourke? I should not regard it as a very important feature. It does not often happen that the river is so low as that.
275. One great feature is that it would do away with the necessity for the expenditure of something like £140,000 in making a railway to Brewarrina? Yes.
276. *Chairman.*] You told Mr. Trickett that 3,600 tons of wool came down the river to the depôt at Bourke? Yes.
277. If this scheme was carried out would that be much increased? I expect it would be.
278. Can you give any idea of how much? I could not.
279. You stated further that the rate was 1d. per ton per mile? Yes.
280. Then for this 156 miles—that would come to a little over £2,000? Yes, £2,200.
281. The estimated cost of this work is £121,100; therefore, if the gross return from the traffic coming down the river were made a State asset, it would represent 2 per cent.? I have not worked it out.
282. Would the Commissioners regard it as a wise expenditure to add the cost of the work to the railway debt and they to undertake the charge of the river traffic from Brewarrina to Bourke? I think the  
Commissioners

Commissioners would be very willing to take over such a river as that between Brewarrina and Bourke at a cost of £120,000 if it was made permanently navigable, and they were authorised to charge tolls which would recoup them for the interest on expenditure. It would be infinitely preferable to taking over a line from Byrock to Brewarrina at a cost of £140,000.

283. If it was made a good waterway the Railway Commissioners could run it at a profit? I am not going to say that; but the Commissioners, I think, would prefer to accept the river at a cost of £120,000 to accepting the railway at a cost of £140,000.

J. Harper,  
Esq.  
15 May, 1896.

TUESDAY, 19 MAY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.  
The Hon. CHARLES JAMES ROBERTS, C.M.G.  
The Hon. WILLIAM JOSEPH TRICKETT.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
THOMAS HENRY HASSALL, Esq.  
GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Charles L. Shainwald, Esq., Inspector of Branches (Messrs. E. Rich & Co., Merchants and Forwarding Agents, Sydney and Bourke), sworn, and examined:—

284. *Mr. Lee.*] Have you an extensive knowledge of the Bourke portion of the business of your firm? Before being general inspector of their branches I was manager at Brewarrina and at Bourke from 1882 to 1894.

C. L.  
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285. You understand the proposal into which the Committee are inquiring? Yes.

286. Has your business necessitated your travelling along the river, or in its locality? I have frequently been compelled to travel between Brewarrina and Bourke, both by road and by river. I have travelled north to Walgett and south to Wilcannia, both by road and by river.

287. Is the river navigable between the places you have mentioned? Not at the present time.

288. Is any portion of it navigable at the present time? At present it is navigable from Brewarrina to the Collawaroy Rocks, a distance of about 40 miles.

289. How far would it be from the Collawaroy Rocks to Walgett? 140 or 150 miles by river, and 60 or 65 miles by road.

290. Are there any steamers trading upon the upper part of the Darling? There are now lying tied up at Brewarrina steamers which trade regularly north from that place to Walgett. They are not trading there now, because of the low state of the river.

291. It has been part of your business to secure produce from the part of the country which will be affected by the Government proposals, and to forward it to Sydney? Yes.

292. At what distances from the river has produce from the stations there found its way to Bourke? Taking Bourke as a starting-point, we have had wool from Mungundi on the north and from Woolerina, a station in Queensland, on the north-west. Woolerina is the furthest part to which we have traded, and is about 180 miles from Bourke. The proposal before the Committee would not, of course, affect the whole of the country south of a line joining those two places.

293. We want to know how far the trade of that part of the country would be affected by the proposal under consideration? I look upon the proposal as part of a scheme for improving the river as far as Walgett.

294. But we wish to deal simply with the scheme as proposed now? The present scheme would not affect traffic as far north as Mungundi, though it would affect traffic as far as Walgett. I would draw the limit at Walgett and Woolerina. Taking Bourke as a starting-point, the area affected in a north-westerly direction would be from beyond the Queensland border, north of Goodooga, and then down towards Walgett.

295. If the suggested improvements were made, Walgett would be the shipping place for the country to which you refer? Walgett and Brewarrina.

296. What is the usual state of the river between Stony Point and Brewarrina? It depends upon the season. In 1884 and 1888 the river was barely running there, and, in places, you could walk over it.

297. In dry seasons that part of the river is utterly unnavigable? Yes; it is simply a chain of waterholes then.

298. Would the same remarks apply to the river above Brewarrina? I have never seen the river above Brewarrina absolutely dry. The natural bar at Brewarrina keeps the water back.

299. But, although the river is not dry, there is not sufficient water for navigation there? No.

300. How often have you seen the river between Stony Point and Brewarrina unfit for navigation? There was no single year when I was there throughout the whole of which the river was navigable.

301. Can you give us an opinion as to what would be the result of making the river permanently navigable? My opinion is that, if the river were locked, a large increase of traffic could reasonably be expected, because, in the first place, there would be a certainty of transit. The difficulty at the present time is that before we can get the traffic to the river the water has run away, and traffic, therefore, selects other routes.

302. What effect would the locking of the river have upon the trade coming from the district you have described? It would have the effect of permanently increasing the volume of the traffic.

303. The volume of the traffic towards what centre? Towards the railway terminus at Bourke. I consider that a further increase might naturally be looked to, because irrigation would be possible along the river-banks.

304. But in confining ourselves to the question of traffic, do you think that if a permanent water-way were made there the traffic which now finds its way down the river to Victoria and South Australia would be diverted to Bourke? Very little of the traffic from the district north of Bourke passes Bourke.

305. Then the locking of the river would practically have no effect upon the traffic below Bourke? No.

306. Whatever effect it might have would be confined entirely to the country above Bourke? To the country north of Bourke.

307.

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307. Can you give us any idea of the present volume of traffic at Bourke? The following is a return of the river traffic at Bourke for the three years 1892, 1893, and 1894:—

	1892.	1893.	1894.
<i>Up-stream.</i>			
Freight from Bourke to Brewarrina and district .....	Tons. 2,192	Tons. 2,078	Tons. 1,893
Freight from Bourke to Walgett and way, passing through Brewarrina north .....	1,393	1,021	790*
<i>Down-stream.</i>			
Wool from Brewarrina and district.....	Bales. 15,960	Bales. 14,592	Bales. 12,749
Wool from Walgett and way, through Brewarrina to Bourke railway terminus ...	12,285	12,528	12,322

\* This falling off is due to the fact that in 1894 the river was not navigable north of Brewarrina for a considerable period.

308. That statement is absolutely correct? Absolutely correct. The figures were taken from our own books.

309. Do the returns which you have given show the business transacted by your own firm? The whole business of the year.

310. As transacted by all the forwarding agents? Yes.

311. If the river is not locked, I presume that the traffic will continue to come to Bourke? It will come intermittently.

312. If the river is locked, to what source do you look for an increase of traffic? The traffic will increase, because of the regularity of transit and the certainty of navigation.

313. Is there not included in your return, traffic from stations in Queensland and north of Brewarrina? Yes.

314. How will the locking of the river increase that traffic? Because now, when the river is not navigable, that traffic goes in other directions.

315. The locking of the river will not increase the carrying capacity of those stations? That return does not show the whole of the traffic upon those stations.

316. Where does the rest of their traffic go to? Some of it finds an outlet in Queensland, while some goes from Walgett to Narrabri.

317. Under what conditions would it go to Narrabri? When the river is not navigable.

318. For various reasons it suits them to send it to places other than Bourke? Purely to get to market.

319. Your argument is that if the river were permanently navigable the whole of that traffic would come to Bourke? Yes.

320. If it all came to Bourke would the returns be doubled? I do not think so.

321. Would they be increased by 50 per cent.? I think they would.

322. The route that the traffic would take in dry seasons would depend largely upon the probability of getting grass and water? Yes, upon the state of the roads, and the speediness with which produce is taken to market by the railway is a great consideration. If there is no river, they send their produce from Walgett to Narrabri, carting it a distance of 140 miles; but when there is a river it goes down to Bourke in five days, and another three days take it to Sydney.

323. What is the distance by road from Walgett to Bourke? 145 miles.

324. And from Walgett to Narrabri is 125 miles? I thought it was more.

325. Will you explain why wool should go from Walgett to Narrabri instead of to Bourke? Because the railway freight from Narrabri is less than from Bourke.

326. Why does any of the traffic come to Bourke, seeing that the distance it has to travel that way is longer? For two reasons; first, because of the speediness at which it can get to market, and, secondly, because of the cheapness of the river traffic for transit.

327. Do you know if there is a specially reduced railway rate for wool coming from Bourke to Sydney? I could not say. £4 0s. 3d. is the rate for greasy wool.

328. Is that rate lower or higher than the rate prevailing on other lines? It is the same as the rate on other lines.

329. Do the Commissioners offer special inducements for station produce to come to the railway at Bourke? Not from this district.

330. Do they allow large discounts or rebates? I could not answer that question.

331. You are not aware of any? I cannot say that I am not aware of any; but I could not very well answer the question.

332. Do you mean that it would be an interference with your business arrangements? No. If I could see the relevancy of the question, I would answer it.

333. Do the Commissioners offer special inducements for produce to come to Bourke? I would rather not answer that question.

334. Would not the export duty in Queensland operate against Queensland produce coming to Bourke? It would to some extent.

335. To what extent? We could overcome it if there were permanent river transit, because we could reduce the river rates to meet it.

336. You could compete more satisfactorily if the river were locked than you can now? Yes.

337. If you had a permanent water-way you would be in a position to snap your fingers at the Queensland export duty? I think so.

338. If the railway were extended to Walgett from any point on the main line, what effect would it have upon this traffic? My opinion is that when the river was navigable it would compete with such a railway.

339. Would I be correct in inferring that if the proposed scheme were carried out it would be unwise to extend the railway to Walgett? I should certainly say so.

340. You think that the extension of the railway to Walgett or to Brewarrina ought to be considered along with this proposal? Yes.

341. And in your opinion the locking of the river would be of more value to the colony than an extension of the railway to either Brewarrina or Walgett? Most decidedly.

342. Have you seen much of the irrigation that has been done in America? I have seen something of what has been done in California, in New York State, and in some of the central States.

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343. Have you been there recently? I was there only a few months ago.
344. Would you care to express an opinion about the possibility of irrigating the Darling country? I could only say generally that I think the country there is suitable for irrigation.
345. You understand that the water would have to be pumped? Yes.
346. Irrigation in California is carried on chiefly by gravitation? For the most part.
347. Hence its cheapness? Yes.
348. You are of opinion that the soil in the Bourke district is suitable for the growth of many things if irrigated? Yes.
349. Do you think that the locking of the river would give a store of water sufficient for the purpose? Yes.
350. If the proposed scheme were carried out, do you think it would be possible for Victorian and South Australian steamers to convey goods as far as Walgett? I do not think they would be more likely to do so if there were a lock than they are now.
351. At the present time the state of the river compels them to stop at Bourke? Not necessarily. When they get to Bourke they can go north of Bourke.
352. But only at intervals, and frequently at long intervals? Yes.
353. At the present time even Sydney merchants are sending goods to Bourke by way of South Australia and Victoria more cheaply than by rail direct? I would not say that that is the general practice, but it has been done.
354. Is it not a fact that the brewers have been doing it for a considerable period? I know that one firm of brewers has been doing it.
355. If we provided permanent water above Bourke, would not the steamers that now find it profitable to trade to Bourke find it profitable to trade above Bourke? They would be in no better position if the river were locked than they are now.
356. Would they not be able to convey return loading down the river to the coast more cheaply than it could be brought by way of Bourke? I do not think so. If that were the case, why is it not being done now. One strong reason why it is not done is that the insurance is very heavy. From Brewarrina to South Australia is a three-weeks' run, and the insurance on wool comes to between 22s. 6d. and 30s. a ton.
357. Is there much traffic from Bourke down the river? There is very little traffic from Bourke south which passes out of New South Wales. The following is a return of the traffic between Bourke and Wilcannia:—

Wool inwards...	{	1892	...	...	...	9,750 bales.
		1893	...	...	...	9,550 "
		1894	...	...	...	7,200 "
Merchandise outwards	{	1892	...	...	...	1,760 tons.
		1893	...	...	...	950 "
		1894	...	...	...	762 "

The falling-off in traffic we attribute entirely to South Australian competition.

358. Your argument is, that if a permanent water-way is established above Bourke, it will very largely increase the railway traffic at Bourke? I cannot say that it will very largely increase it, but it will increase it.
359. If dues were charged upon the river, that would have the effect of raising the freights? That would, of course, depend upon the amount of the dues; but they would be counterbalanced by the cheaper steamer freights on the locked river.
360. Supposing the dues were sufficiently heavy to cover the cost of maintenance and the interest on the outlay? I could not deal with that point.
361. You look at this matter from a very broad point of view? I look upon this as a national scheme.
362. And you consider that many good effects may flow from the carrying out of the proposal—irrigation, closer settlement, and the bringing of country into occupation which is almost devoid of habitation now? I think that the scheme would open up a much greater area to settlement; that it would increase the railway traffic; and that it would give the residents of the district better opportunities for sending produce to the metropolis.
363. *Mr. Clarke.*] Will the water that is stored up be used for irrigation? I cannot give any expert opinion upon the subject of irrigation. I can only give evidence as to the traffic of the district.
364. If that country were irrigated, what crops would be grown there? I can only speak generally, and say that the soil is good and the land eminently adapted for irrigation.
365. Has irrigation been carried on in the district? Some small areas in the neighbourhood of Brewarrina and Bourke have been irrigated. Proof of the value of irrigation is given by the Pera Bore settlement, eight miles from Bourke.
366. Has that settlement been successful? I would not say that it has been financially successful, but they have grown some very fine crops there. The settlement is as yet in its infancy.
367. What description of goods would be carried on the river if the river were locked? The chief traffic inwards has been with wool, and outwards with station supplies, machinery, and so on. I do not think that the nature of the traffic would differ if the river were locked.
368. Is there any possibility of the river being utilised to convey stock north of Brewarrina to Bourke? We are in a position to do that at the present time.
369. Would it be cheaper to bring stock in that way than to drive them? No; but in a dry season we could shift them in that way if the river were navigable.
370. Would a railway from Byrock to Brewarrina serve the public better than the locking of the river? I think that the river would always be a competitor with such a railway, and that, of the two proposals, the locking of the river would be the cheaper, and would best serve the community at large.
371. Would it be to the benefit of people living between Bourke and Brewarrina and further north to have the proposed scheme carried out, rather than to have a railway to Brewarrina? I cannot say that it would be preferred by the townspeople, but it would be better as a matter of State policy.
372. Do any of the settlers north of Bourke object to the scheme? As far as I know, the residents of the towns, being personally interested, would prefer a railway.

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373. I suppose the Bourke people would like to have the scheme carried out? My evidence is *ex parte* evidence. I would like to see the work done, because it would cause Bourke to become a larger centre.
374. Do you think there would be any danger of the river overflowing and following other channels? That is a matter upon which I could give no opinion.
375. Is it a fact that the Darling is liable in many places to flow in new channels after a flood? When the river is very high the river will find new channels, but it is not a swiftly-flowing stream. The water lies over the country for miles and miles for weeks.
376. *Mr. Hegan.*] You are acquainted with this country? Only generally.
377. You would not be prepared to speak as to the character of the land on each side of the river? No.
378. You do not know how many sheep it will carry to the acre? At present the runs there are very large, and there is an average of about one sheep to 8 or 9 acres.
379. Do you think that under a proper system of irrigation that land could be made to carry nine or ten sheep to the acre? Irrigation would certainly increase the carrying capacity of the land.
380. Is it not a fact that on each side of the river the land is fairly good, and that when rain comes the vegetation shoots up almost at once? Generally speaking the land is as good as any in the district.
381. There is land in the district I suppose which feeds three or four sheep to the acre? I do not think that any land in that district will carry three sheep to the acre, season out and season in.
382. Do you not think that irrigation would convert these large tracts of land to cultivable areas and to good pastoral areas? I should say that irrigation would considerably increase the value of the land to the Crown, but I could not give an expert opinion as to the extent of that increase of value.
383. That increase of value would help to repay the cost of the work? I think so.
384. Would you give us the benefit of what you saw of irrigation during your travels? I can only speak generally as to what I saw in Southern California. All the systems of irrigation I saw there were gravitation systems.
385. They were carried on by private enterprise? Entirely.
386. The State had nothing to do with them? No.
387. But the holders made them very payable? Yes; I have seen land bought in Southern California for about £1 per acre and sold for about £30 an acre.
388. Do you know of any irrigation settlement that has been a failure? Well, there is Mildura; but I think that place was managed on wrong lines. I know one person there who has not done very badly. He is getting the same price for his dried fruits as the imported article realises.
389. What is the distance between Walgett and Brewarrina? About 85 miles.
390. Do you not think that the natural course of traffic from Walgett is to Narrabri? Not when the river is navigable.
391. As a matter of public policy you think that this scheme should be carried out, not only to provide for irrigation but to give increased traffic to the railway at Bourke? Yes.
392. You think that if the scheme were carried out it would increase the amount of traffic coming from the southern parts of Queensland? Yes.
393. Have you ever heard that the people have asked for a work of this kind? No; but I think that the scheme should commend itself generally to the settlers of the district, though not so much to the townspeople.
394. Have you heard an opinion expressed in favour of a railway to Brewarrina, in place of the proposed scheme? I think the Brewarrina people would prefer a railway. They would like to see the locking of the river proceed from Brewarrina north.
395. A railway would only provide means of transit;—it would give no facilities for irrigation? That is so.
396. *Mr. Hassall.*] What was your experience of the river while you were living in the district? In 1884-85, and in 1888-89, the river was not navigable for the best part of the year.
397. But in other years it has been fairly navigable? In some years it has not been navigable for six months out of the twelve.
398. What advantage will be derived from locking the river? I believe that it will increase settlement along the river banks, and lead to the irrigation of the adjoining land.
399. How could settlement be increased along the river banks? At the present time the bulk of the river frontages is unalienated.
400. But are you aware that most of that land is under lease for twenty-eight years? Well, I do not want to give evidence upon that point at all; I only came to speak about the traffic.
401. I understand from your evidence that if the river were made navigable between Bourke and Brewarrina, the bulk of the goods consumed in that district would go by rail to Bourke, and then up the river? Yes.
402. Have you a knowledge of the river above Brewarrina? Yes; generally.
403. If the river were made navigable to Brewarrina, would there be any great difficulty in getting to Walgett? Beyond the Collawaroy Rocks the difficulties would be the same as they are now. Traffic from Walgett would be as likely to come to that point as to go to Narrabri, because it is nearer.
404. I suppose you are aware that the distance between Walgett and Brewarrina is about the same as between Walgett and Narrabri? No; it is not so great between Walgett and Brewarrina.
405. What is that distance? About 85 miles by road.
406. Then it is 50 miles nearer Narrabri? Yes; with a better road.
407. In what way is the road better? There is more grass, and the road is better for traffic.
408. You think that if the river were navigable to Brewarrina traffic from Walgett would go to Brewarrina and thus on to Bourke? A portion of it would. I do not say that all of it would. There are a good many selectors beyond Walgett in the direction of Narrabri who would send their produce to Narrabri, because they would be as near to Narrabri as to Brewarrina.
409. Do you think that people would send their produce by road to Brewarrina, thence by river to Bourke, and thence by rail to Sydney, when they need only send it to Narrabri, and thence 350 miles by rail to Sydney? I think that if the river were locked, a large portion of the traffic from the district towards Walgett would come to Brewarrina, and thence to Bourke.
410. What is your principal outlet for goods from Bourke now? We send to all the stations as far as Walgett, and slightly north of Walgett, and to some places in towards Narrabri.

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411. Do you serve any great part of the Narran, Bokhara, Birrie, and Culgoa districts? Pretty well all of that country.
412. Brewarrina is the depôt for those people? Yes.
413. You think that if the river were navigable as far as Brewarrina they would send their produce to Bourke? Yes.
414. Do you think that if the river were navigable to Walgett it would attract any of the traffic out towards St. George? I do not see why it should not.
415. You think that the natural facilities would cause it to drift that way? Yes.
416. If a railway were constructed to Walgett, what effect would that have upon the river traffic? The river would compete with such a railway, and I do not see how the freights could repay the cost of construction. If now, when the river is not locked, we can bring produce by water from Walgett to Bourke, and thence by rail to Sydney, what sort of revenue would such a line have.
417. Do you think that the people of Walgett would be satisfied with the arrangement you propose? That I cannot say.
418. Do you think the people at Bourke would be content to send their produce round to Sydney by way of Adelaide? I do not think they would like to do that.
419. Then if the line is constructed to Walgett, there is a probability that it will be practically useless? I do not see how it could earn sufficient revenue, because of the competition of the river.
420. Do you think that the proposed scheme is preferable to a railway from Byrock to Brewarrina? How could the cost of constructing such a line be repaid by its earnings when there is the river to give constant competition. We can carry goods by river from Bourke to Brewarrina, and Brewarrina to Bourke for as little as 12s. 6d. a ton, though the regular rate is 20s. a ton. If the river were permanently navigable, we could carry goods for 7s. 6d. or 5s. a ton, while the railway could not carry goods at that price.
421. Is not Brewarrina the distributing centre for the large pastoral district to which I have alluded? Yes.
422. The produce from that district, if the proposed scheme is carried out, will have to go along the river to Bourke, and then come back part of the way on the railway? Bourke is as much the depôt for that district as Brewarrina is. Bourke is as near the Narran and Birrie country as Brewarrina is.
423. If there were a railway to Brewarrina would those people go to Bourke? In a great many cases Bourke would be as near as Brewarrina.
424. If there were a railway to Brewarrina would not the bulk of that traffic go to Brewarrina? That is quite true.
425. You say that it would be beneficial both for the Bourke traffic and the traffic from the country north of Bourke, to have the river made permanently navigable between Bourke and Brewarrina? Yes.
426. Do you think it would be advantageous to improve the river higher up than that? Looking at the work as a national scheme, I should say, yes.
427. In the event of there being a full river, would the water back up in the Culgoa or Bokhara for any distance? I do not think so.
428. Do you think it would be beneficial to improve the navigation along the Barwon towards Collarandabri and Mungundi? I look upon that as part of the national scheme.
429. You think it would be better to improve the river upwards rather than downwards? Yes.
430. *Mr. Roberts.*] Does the 50 per cent. of traffic which you say would be gained by Bourke if the proposed works were constructed now to go to Queensland? No, it is not lost to this colony altogether. The bulk of it goes to Narrabri.
431. But we should get some of the traffic that now goes to Queensland? Yes; from Goodooga north.
432. You have looked at this scheme from the point of view of the commercial advantage to be obtained by giving permanent water-carriage? Yes; purely from that point of view.
433. You look upon the question of irrigation as of secondary importance? Not necessarily; but I am more familiar with the commercial aspect of the case.
434. Does Bourke suffer now from a scanty water supply? Yes, at times; because the river is the only source of supply. You cannot get fresh water by sinking wells.
435. Then the locking of the river would be of great advantage to Bourke? Yes. The Department of Mines tried three bores within a mile or two of the township, but in each case they were unsuccessful.
436. When the river is low the quality of the water is unsatisfactory? Yes; it is very bad.
437. Has the Darling any tributaries between Bourke and Brewarrina? Yes; the Bogan and the Culgoa.
438. Is the Culgoa ever navigable? No; although we have been up it nearly as far as the junction of the Birrie. We did not keep to the river channel, however.
439. How far is that? Thirty-five or 40 miles by road.
440. *Mr. Wright.*] Your company has practically a monopoly of the river traffic? Very nearly.
441. How many boats does it employ altogether? Fourteen or sixteen.
442. Do you bring much up the river from South Australia? Not a great deal.
443. There are not many boats trading on the lower part of the river? Not between Wilcannia and Bourke. Most of our boats trade from Bourke north, and from Wilcannia to South Australia and Victoria.
444. If the insurance on wool is £1 2s. 6d., what is the percentage? I reckon the value of wool to be £150 per ton. That would be 20s. or 25s. per cent.
445. Is not that a higher rate than used to prevail? Well, the rate used to be higher before 1884.
446. You are aware that certain rebates have been allowed by the Railway Commissioners on goods to and from Bourke? Not rebates.
447. You are perfectly cognisant of the fact that the Commissioners have rebated the whole amount of the border tax on Queensland goods? No, I am not. They have not rebated the whole amount of the border tax.
448. Have they rebated £2 a ton on Queensland wool? That I cannot answer.
449. Have not considerable concessions been made to your firm for large consignments of goods—sugar, for instance? No concessions have been made to our firm. We have paid the rates published in the rate-books.
450. You have received a rebate on 100 tons of sugar? There has been no rebate. We have paid the published rates.
451. The sugar was carried for less than the rate for an ordinary truck load? The Commissioners have made special rates for large parcels forwarded at their convenience.

- C. L. Shainwald, Esq.  
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452. The Commissioners will carry consignments of 100 tons for less than the charge for an ordinary truck load, and you have received the benefit of this arrangement? We have not received any more benefit than anyone else.
453. Your constituents have received the benefit of the arrangement? Anyone can avail themselves of the arrangement.
454. You have got up sugar at the lowest rates? We have got up sugar at the lowest rates disclosed by the rate-book.
455. Has not traffic been diverted to Bourke by reason of these cheap rates? The object of the Commissioners in making these rates is to meet the Queensland competition. Similar concessions were made to the Victorian traffic.
456. Are you aware that the Commissioners have only given a concession of 15s. a ton to Narrabri, as against £2 to Bourke? Well, they have given the same concession to places competing with the Victorian traffic.
457. Do you know what rate is charged for wool from Narrabri? The present rate is £3 as against £4 from Bourke.
458. The rate from Narrabri to Sydney is £4 5s. a ton, and from Bourke to Sydney, £4 0s. 6d. a ton? Well, the river traffic is not affected by any concessions given by the Commissioners.
459. Are you aware that Brewarrina would be 30 miles nearer to Sydney than Bourke is if the line were taken to Brewarrina? No; it would not be nearer to Sydney than Bourke is. The river would compete with the line. The earnings of the railway would not pay for the cost of construction, because the Commissioners could not well charge increased rates.
460. What competition would there be if the rate were the same to one place or the other? Places on the river between Bourke and Brewarrina might go to either terminus.
461. What about the Narran traffic? That traffic would go to Brewarrina.
462. You do not agree that the special concessions given to Bourke have induced a larger traffic over that line than it would otherwise have? No.
463. Then how is Bourke competing with Narrabri? It only competes with Narrabri when there is a river.
464. You think that if the river were locked, and the railway rates made the same on all lines, you could take all that traffic? I think its natural course would be to go down the river.
465. You think that the traffic from the Mungundi district should go 400 or 500 miles down the river, and then 500 miles from Bourke to Sydney by rail, instead of going direct to Sydney? I think that is its natural course.
466. I understand that you favour the locking of the river as far above Walgett as possible? Yes.
467. In order to utilise the river for navigation, and, possibly, for irrigation? Yes.
468. I understood you to say, in reply to Mr. Fegan, that irrigation would increase the number of sheep in the Bourke district? I said that it would increase the value of the land along the river.
469. Have you had any experience, or have you read, of irrigation being employed for grazing purposes? No.
470. Have you heard of irrigation being successfully adopted in America for the raising of cereals? Yes; in California wheat and corn are grown by irrigation.
471. There I understand all the irrigation is done by gravitation? Yes.
472. Do you think you could grow wheat if you had to raise the water by artificial means? I have seen very little cultivation done by pumping.
473. If a company were formed to cultivate 10,000 acres of wheat by irrigation by means of pumping, would you take shares in it? I should not be afraid to support it.
474. Would you take shares in it as a speculation? I do not claim to be a speculator.
475. *Chairman.*] The traffic coming down from Brewarrina to Bourke would reach the New South Wales railway system somewhere? Yes.
476. Therefore, the proposed locking of the river would concentrate at Bourke traffic that now goes partly to Narrabri and partly to the western line? Yes.
477. Would the proposal materially affect the amount of produce reaching our railway system? Not very largely.
478. Do you think that tolls should be collected on the river when locked? I do.
479. What would be a fair toll to levy? It will have to be a tonnage charge; but I could not give you an opinion now.
480. What traffic would be required on the river to give a fair return? That I could not say without going into the figures.
481. How do you distribute now when the river is not navigable? By teams.
482. What do you pay from Bourke to Brewarrina? The present rate of carriage is from 40s. to 45s.
483. And when the river is up? Twenty shillings for large lots, 25s. for small consignments; but with a permanent river, the charge would be lessened by one-half.
484. *Mr. Hassall.*] River tolls included? No.
485. *Chairman.*] With permanent water, would 10s. a ton be a fair charge? Yes; that rate would pay very well.
486. Therefore the locking of the river would lessen the cost of carriage to people at Brewarrina by 30s. a ton? Yes; in the dry periods of the year.
487. What is the carriage from Byrock to Brewarrina? About £2 a ton.
488. Could all the traffic that would come to any part of the river between Bourke and Brewarrina go to either Bourke or Brewarrina readily? Yes. The roads are the same in either direction.
489. *Mr. Wright.*] And the river would be the same if locked? Yes.
490. *Chairman.*] Would it be more expensive for teams coming from the north or north-east to make Bourke or Brewarrina, than to make the banks of the Darling, or some other point;—would the main body of the traffic tend towards the townships, whether the river were locked or not? Yes.
491. *Mr. Wright.*] What is the insurance between Brewarrina and Bourke at the present time? I think about 5s. or 6s. per cent. That is nearly 10s. a ton upon wool.

THURSDAY, 21 MAY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.	CHARLES ALFRED LEE, Esq.
The Hon. CHARLES JAMES ROBERTS, C.M.G.	JOHN LIONEL FEGAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	THOMAS HENRY HASSALL, Esq.
HENRY CLARKE, Esq.	GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Richard Davis Jones, Esq., Metropolitan Inspector of Stock, Department of Mines, sworn, and examined:—

492. *Chairman.*] Have you a knowledge of the Darling River? Not a very great knowledge, though I have been on the Darling. I know more about the Lachlan River. R. D. Jones.  
Esq.
493. Do you know the Darling River from Bourke to Brewarrina? No. The only places on the Darling to which I have been are Wentworth, Wilcannia, Bourke, and on the upper river, where it is called the Barwon—Walgett. 21 May, 1896.
494. *Mr. Clarke.*] Do you know the nature of the country in the locality of the proposed works? Not between Bourke and Brewarrina.
495. But you know country which is similar to it;—all the country out in that district is about the same? It is much of the same character.
496. Do you think that live stock could be carried more cheaply along the river, if the proposed scheme were carried out, than they could be driven. I do not know about that; I do not think they could.
497. You think it would be cheaper to travel live stock from Brewarrina to Bourke, a distance of 70 miles, by road than to send them down the river? Well, I have no idea of what the charge would be for carrying stock by water. If the season is good and there is plenty of grass and water, you can travel stock along an ordinary road at a very reasonable expense.
498. Do you think the construction of the proposed locks, and weirs, would be a public benefit or otherwise? I think it would be a public benefit. My knowledge of the absolute benefits derived by conserving water in dry country, such as this, leads me to think that the scheme will be of immense value to the colony generally. It would very largely favour settlement.
499. If tolls are not to be charged upon the river, that would be in favour of sending stock that way, instead of travelling them? I think it would.
500. If a railway were constructed from Brewarrina to Bourke, would it be cheaper to send stock by it than by water? I fancy that the water carriage would be the cheaper. It is in all other cases.
501. Do you think that irrigation in the neighbourhood of the proposed locks would prove profitable? I think it would. So far as I know it has been found profitable wherever it has been practised. I have seen its results in other dry parts of the interior.
502. What kind of crops would be produced there if the land were irrigated? Feed for stock would be grown. Lucerne is largely cultivated for that purpose, and I have seen it grown very successfully upon the Lachlan. I was thirty-five years in that district.
503. Do you know of places in this colony, or in Victoria, where irrigation has been a success? Where it has been tried on a limited scale upon the Lachlan it has been a success, and notably at Mr. Gatenby's place, about 25 miles below Forbes. It has not been carried on upon a very large scale in that district; but where tried it has been very successful.
504. Do you think that the Darling country would be capable of producing cereals? Yes; I am sure that it would, and wheat more particularly.
505. Would it pay to send cereals from that district to Sydney? I think it would pay to send wheat. Oats require a rather different climate from wheat.
506. They must be grown for hay? Yes.
507. *Mr. Fegan.*] You have had a great deal of experience in connection with the pastoral industry in this colony? Yes.
508. You have been the manager of large holdings? Yes.
509. You know the scheme before the Committee? I looked at the plans just before the meeting of the Committee.
510. I suppose that you are entirely in sympathy with some such move as is proposed? Certainly; I always have been.
511. Have you had any experience of irrigation? Not personally, though I have seen it tried.
512. You know the Lachlan district better than the Darling? Yes, because I have lived there for the greater portion of my life.
513. Is irrigation being carried out there by private individuals? Only in a small way. Mr. Gatenby's scheme is the largest that I know of about there. Mr. Edols, of Burrawang, also irrigates. He has been irrigating lucerne and small paddocks to feed stud stock and better-class sheep for the last twelve or fourteen years.
514. What has been the success of the system? The system has been a decided success.
515. Do you know what it originally cost? I do not.
516. Is it a pumping or a gravitation scheme? A pumping scheme.
517. From what source is the water obtained? From what is known as the Burrawang Lagoon. The same gentleman has irrigated other paddocks from the Lachlan River.
518. And has he, by means of irrigation, kept the stock in good condition during times of drought? Yes. Irrigation has saved him very large losses.
519. Do you think that if irrigation is found to be generally successful, it will revolutionise the pastoral industry. There is no doubt about that.
520. Do you know much of the country on the Barwon? No, but I believe that it is very similar to the country on the Lachlan.

- R. D. Jones, Esq.  
21 May, 1896.
521. Your remarks about irrigation on the Lachlan will apply to the Darling? Yes, the country on the Darling is very similar. There is, perhaps, more red soil about the Darling.
522. The scheme before us has two objects—to irrigate the land near the banks of the river, and to make the river navigable throughout the year; do you think that the Government would be recouped its expenditure, because of the increase of value of land along the river which will take place? I daresay it will, indirectly.
523. The land which is irrigable, could be leased at higher rents and cheaper carriage would induce closer settlement? Yes; because the persons living there would be able to make larger profits.
524. You understand what droughts are? Yes; when I was quite a young man the droughts of 1866 ruined me. I have seen as many droughts as anyone of my age, and as severe droughts. I have seen the Lachlan so dry that you could not get a drink in it for a stretch of a mile and a half.
525. You think the Government should try to carry out some scheme which would protect pastoralists and agriculturists against droughts? Yes; I think that the Government, if they undertake such a work, will deserve the thanks of the public.
526. You think that it would be comparatively easy to help the people in this way? I think so. The Lachlan is a fair stream under ordinary circumstances. It is very much bestrewn with timber, but that could be cleared away without much trouble.
527. What has been the effect of irrigation at the two places you have mentioned? It has improved paddocks which, in ordinary seasons—and down there ordinary seasons are dry seasons—would only carry a sheep to about  $2\frac{1}{2}$  or  $3\frac{1}{2}$  acres. Those paddocks, having been subdivided, sown with artificial grass, and irrigated, will now keep ten or fifteen sheep to the acre; in fact, the sheep cannot eat them down. The feed is sometimes so abundant that they have to take the sheep out, because, as you know, the delicate part of the merino is his foot, and the damp land affects their feet.
528. Where land is irrigated a man is not weighed down with anxiety in seasons of drought? No. It must be remembered, too, that the condition of wool is affected by the condition of the animal upon which it grows.
529. It is proposed to spend £121,000 upon this work;—do you think the scheme is worth a fair trial? I think so. I think that, inasmuch as irrigation has been successful on a small scale, it will be successful where the undertaking is larger.
530. Have you seen any irrigation scheme which has been a failure? I have not.
531. Do you know anything about the Mildura settlement? No; I only saw it from a distance, on my way from Euston to Wentworth.
532. Is it your opinion that irrigation schemes, if carried out scientifically, will make these large arid tracts useful and profitable? No doubt about it. Irrigation is what we require. A dry country is practically useless without water.
533. In one sense a scheme like this would be better than a railway? I think it would in two senses. It provides means of transit whereby produce may be taken to the railway, and it puts the country in a condition for producing something for the railway to carry.
534. Protecting people from the great losses which now occur because of droughts? Yes; just now they are languishing from droughts in a great many parts of New South Wales. I have seen some dreadful accounts from Bombala, and that district, and when I was in Hay on Easter Monday, the country was looking very bad. Since I was there, however, they have had good rain, and in warm weather the country rapidly improves after rain.
535. *Mr. Roberts.*] Have you ever been into the country lying north of Brewarrina towards the Queensland border? No; I have only been out towards Wanaaring on the Paroo. I have not been in the country of which you speak.
536. Have you ever been to Brewarrina? No.
537. Are you acquainted with the country between Walgett and Bourke? No, I have not been along there; but I suppose it is like those portions of the Darling country which I have seen.
538. Is the Darling country fertile in character? Yes, it would be very good if they had water.
539. If the land were irrigated it would grow almost anything? I think so.
540. Can you give the Committee any information as to the number of stock coming down to Brewarrina from the country out towards the Queensland border? Not from memory. I should have to turn up the records in the office to get that information. Cattle more than anything else come that way.
541. Have you ever given any consideration to the question of locking the Darling? No; I should have paid more attention to the scheme if it had been proposed to make these locks on the Lachlan.

Hugh Giffen McKinney, Esq., Chief Engineer, Water Conservation Branch, Department of Mines, sworn, and further examined:—

- H. G. McKinney, Esq.  
21 May, 1896.
542. *Mr. Lee.*] You have furnished the Department of Mines with more than one report upon the question of locking the Darling? Only one report was published.
543. Did you not report upon the subject in 1891, and again in 1893? The matter was referred to by me in a general report upon the question of water conservation, prepared for the Minister in 1891. At that time I had only a very limited amount of information at my disposal. The special report published in 1893, was prepared after a very elaborate investigation of the whole subject.
544. What is the Committee to understand as the primary object of this scheme? I regard the provision of permanent water at an improved level as the more important object.
545. Had this matter received much consideration by your Department prior to the suggestions made by the Railway Commissioners? I do not know what suggestions the Commissioners made. I do not recollect having had any suggestions before me.
546. Have not the Commissioners, from time to time, referred to the desirableness, in the interest of the Western Railway, of locking the Darling? I believe they have; but I have only seen such statements in the newspapers. I have not read any reports upon the subject.
547. Were you moved to propose this scheme largely in order to obtain more traffic for the railway, or in order to conserve water to be used in other directions? I look upon the conservation of water as the more important object; but the other is also a matter of importance.
548. Once the water is conserved it will be possible to use the river for the advantage of the Railway Commissioners? Quite so.

549. But you attach a much higher importance to the scheme because of its effect in increasing settlement in that distant part of the country? Quite so.

550. The late Mr. W. C. Bennett, at one time Engineer-in-Chief for Roads and Bridges, held that the main function of the western rivers was not so much the carrying of produce as the production of something to carry:—do you endorse that opinion now, having had the advantage of further investigation? Yes; that opinion was given by Mr. Bennett a very long time ago, during the course of an investigation about railways.

551. It was at one time held by Mr. Darley and other engineers, that it would be advisable to lock the whole river from Wentworth upwards; but of late years, the section from Wentworth to Bourke has been practically dropped? For the time, I understand.

552. And the attention of the engineers has been devoted to that portion of the river lying between Bourke and Brewarrina? Yes; as I understand, the greatest combined advantage can be had there.

553. Therefore, we now have a definite estimate of the probable cost of the scheme as shown on the plans before the Committee? Quite so.

554. At page 21 of the report issued in 1891, you say—

Keeping in view the objects for which works for water conservation on the river Darling are proposed, the following would be legitimate sources of revenue on account of these works:—(1) Rights to pump water for irrigation from the river Darling, and the lagoons connected with it; (2) rights to pump from lakes or other natural depressions into which the waters of the river would be diverted; (3) irrigation by direct flow through natural or artificial channels from the river; (4) increase in the value of land due to the works; (5) navigation tolls.

You go on to assert that if the supplies calculated upon were obtained you would have sufficient water to irrigate 220 acres to every mile of river frontage? Much higher weirs than are now thought advisable were then contemplated. The quantity of water now proposed to be stored is much less.

555. That would account for your statement the other day that you will be able to irrigate 100 acres for every mile of river frontage? Yes; I hope that it is understood that that is the area which could be irrigated merely from the water stored up.

556. You also state in your report that a pumping license, equivalent to 5s. an acre, would be a very reasonable thing to insist upon, and that this alone would bring in a revenue of £50,000 per annum;—how do you make up that estimate? Simply by reckoning how much 5s. an acre would come to on 200,000 acres.

557. But 200,000 acres is a very large area, and it is a question whether you will have water enough in your weirs to irrigate that area? The quantity of water stored up would not be sufficient to irrigate that area; but the area which could be irrigated from the natural flow of the river, in addition to the water stored up, would greatly exceed it.

558. Do you propose that every freeholder in the district shall pay a pumping license, whether he uses the water or not? No; I propose that everyone who uses the water should pay. The ideas expressed in the report have been very much modified since, and I may mention that the Secretary for Mines and Agriculture has given notice of his intention to introduce a Bill dealing with the question of giving rights to take water from rivers. That Bill covers the whole matter dealt with here. This report is merely a forecast in which certain things are assumed.

559. Well, the Committee want to know why you estimated the probable revenue from pumping licenses at £50,000 per annum? As a matter of fact, if a permanent supply of water were provided on the Darling, it would be worth the while of the people there to pay that rate for it.

560. You base your estimate on the assumption that every person using water for irrigation purposes would pay a pumping license fee of 5s. per acre? Yes.

561. And you assume that 200,000 acres would be irrigated;—what ground had you for that assumption? Well, this report was made in the earlier stages of the investigation.

562. Does subsequent research confirm the opinions which it sets forth? On the whole it does not; but the circumstances of the case are sufficient to account for that. In this country every possible obstacle has been placed in the way of those who want to use water, while in America every facility is given to them. I do not think that our settlers are less enterprising than those in the western states of America, and I know that under similar circumstances the American settlers would be willing to pay that amount for irrigation.

563. On broad grounds any person who is able to obtain sufficient water at all times for 5s. per acre per annum would be obtaining it cheaply? Not under all circumstances. There are circumstances under which irrigation would not pay.

564. But if a man could get permanent water at that rate he would be getting it very cheaply? I think so.

565. Therefore your estimate is not excessive? No.

566. But you are not prepared to say how many people will avail themselves of this water? No.

567. That would depend very largely upon the settlement of the Crown land along the river? Yes.

568. Will you let the Committee know what rates were charged at Mildura for water? For the first eighteen months no water rates were levied, and most of the settlers there thought they were to get their water for nothing. But, after that, a rate of 6s. per acre was imposed, the people being informed that that amount was necessary to meet the expense of pumping. Next year a rate of 12s. per acre was struck, and the year following a rate of £1 per acre, and then the people struck also. That was when the crisis came.

569. But they had magnificent pumping machinery there? They had very fine pumping machinery, though the circumstances under which that machinery was worked were by no means very favourable.

570. When you made your estimate upon a charge of 5s. per acre, did you take into calculation the fact that the people using the water would in addition have to pay the cost of pumping? Yes; the 5s. per acre would only be the rate paid to the Government. This matter, however, has been modified by subsequent policy. In this connection I should like to read an extract from a report of the United States Census Office, dated 20th August, 1892, which is referred to in a paper upon the progress and position of irrigation in New South Wales, read by me before the Royal Society, and which I will now hand in for the information of the Committee. The extract to which I refer is as follows:—

The average value of the land irrigated in 1889 with the improvements thereon, is found to be 83.28 dollars per acre, and the average value of products for the year stated is 4.89 per acre. By correspondence with over 20,000 irrigators, fairly distributed throughout the arid and subhumid regions, it has been ascertained that the average first cost of irrigation is 5.15 dollars per acre, and the average value placed upon the water rights, where separable from the land, 26.00 dollars per acre, or

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over three times their original cost. The average annual expenditure for water, as distinguished from the purchase of water rights, is 1·07 dollars per acre, and the average cost of the original preparation of the ground for cultivation, including the purchase of the land at the Government rate of 1·25 per acre, is 12·12 dollars per acre. By applying with necessary modifications, to the enumerator's returns, the averages obtained for each separate State and Territory, it has been found that in round numbers the total investment in productive irrigation systems utilised in 1889, in whole or in part, was up to June 1st., 1890, 29,611,000 dollars. Their value at that date was 94,412,000 dollars, showing an apparent profit of 64,801,000 dollars, or 218·84 per cent. In the same manner the aggregate first cost of the irrigated areas with their water rights, not including the farms of the subhumid States has been ascertained to be 77,490,000 dollars, and the value of the same on June 1st., 1890, 296,850,000 dollars, showing an increase in the value of land and water rights of 219,360,000 dollars, or 283·08 per cent. In other words, the land irrigated in 1889 was worth nearly four times what it cost, no allowance evidently being made for failures. The total expenditure for water, including the maintenance and repairs of ditches, in the arid states in 1889 was 3,794,000 dollars, and the total value of products 53,057,000 dollars.

571. *Mr. Wright.*] Those are all gravitation schemes? Nearly all of them are, though there are many artesian wells and many pumping schemes also.

572. *Mr. Lee.*] The next source of revenue to which you allude is derived in exchange for the right to pump from lakes and other natural depressions into which the water can be diverted;—can you tell the Committee what you estimate to be the probable revenue from that source? That information would not be of much value now, in view of the provisions of the Bill to which I have referred. You will, however, find a list of the lakes along the Darling and of the cubical contents of each at the end of the report furnished by Mr. Ward and myself.

573. You are not in a position to tell us the probable revenue from that source? No.

574. The third source of revenue is derived from irrigation by direct flow through natural or artificial channels from the river;—can you tell us approximately the probable revenue to be derived from that source? It would be a very difficult matter to get that information.

575. These are probable sources of revenue, but they are indefinite? It is practically impossible to estimate the revenue from these sources. All revenue obtainable will depend very largely upon the settlement of the district and the rates charged.

576. Your fourth source of revenue, which in your opinion is the most important, is the increase in the value of the land, owing to the carrying out of the proposed works. Perhaps you will fully explain that? Even where land is used only for pastoral purposes if a small area is irrigated not only is the value of the irrigated area increased, but the value of the whole area is increased. For instance, if on a property of 10,000 acres, 500 acres were irrigated, the value of the entire holding would be materially increased.

577. But if it were a leasehold area, the rent would be subject to reappraisalment at certain periods, and consequently the leaseholder in incurring expenditure for irrigation would simply be increasing his rental? Undoubtedly, but he would increase his income still more.

578. Did you attach any importance to the fact that Crown lands may be enhanced in value? Basing my estimate upon the experience of the Western States of America, I assume that the value of the unalienated Crown lands would be materially increased.

579. That increase of value, although it would go to the State, through the medium of the Department of Lands, would do nothing towards directly recouping the expenses of this work? Any work that increases the productiveness of the land and makes settlement closer must provide more traffic, not only to the railway but for the river, and this indirect return would probably more than compensate the Government for their outlay.

580. If the value of the Crown lands on the Darling is increased by 5s. an acre, the money will go to the Lands Department? That is so; but it does not matter very much whether it is the Department that incurs the expenditure or some other Department that gets the advantage, so long as there is an advantage.

581. You hold that the work would contribute to the general prosperity of the country? Quite so.

582. And that should cover all minor considerations? Quite so.

583. Your fifth source of revenue is the navigation dues;—I should like to know whether it is proposed to charge river dues? I do not know what the policy of the Government is in regard to this matter. Individually, I think, that such dues should be charged. There are precedents both for collecting dues, and for not collecting them. Which precedents the Government will adopt I cannot say.

584. If dues were charged the people who used the river would simply be asked to pay for services rendered? Yes.

585. Just as they would be asked to pay rates if they used the railway? Exactly.

586. The question then resolves itself into this;—what revenue is the country to get to recoup the working expenses, and the interest on the money expended on this scheme;—have you any proposal to make which will enlighten the Committee upon the point? I can only give it as my individual opinion that dues should be charged, but I should like to consult the Department further before making any definite statement.

587. You are aware that the question of river dues has been mooted from time to time in the past? Yes.

588. I think that at one time a Bill was submitted to Parliament dealing with the subject? I am not sure about that, but I know that the question has been raised in Parliament.

589. Can you give the Committee any idea as to what led up to the proposal to charge river dues? I think it was largely because of the great expense which had been incurred in snagging the Lower Darling.

590. Which work rendered the river more navigable for South Australian and Victorian steamers? Yes.

591. Then the railway consideration came in? Yes.

592. The Railway Commissioners advocated that something of the kind should be done? They favoured the locking of the Upper Darling. When Mr. Ward and I were preparing our report, he called upon the Commissioners about the matter.

593. Unless revenue is derived from some source, how are these locks to be maintained and worked? In regard to that matter, I should, perhaps, mention that in France they have adopted the principle that rivers and canals should be considered highways, and therefore be free from tolls. In that country they have spent an enormous amount in improving their inland navigation; more I think than in any other country in the world. They consider that the indirect benefits obtained from the improvement of the rivers are so great that the Government should carry out the work and make no charge for it. I do not quite agree with the principle, however, because I do not think that it is a fair one.

594. The maintenance of these locks will be a very costly matter? It will not be very costly.

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595. Will they not be subject to great damage in times of flood? No, because there is very little to be damaged. Practically the shutters are the only part of the work liable to be damaged, and, as they will be plain and simple in construction, it would not be difficult to replace a damaged shutter at any time.

596. But a certain amount would have to be paid annually for maintenance and to provide wages for the men in charge? The amount would be merely nominal as far as repairs are concerned.

597. Have you estimated what it would be? It would be about £250 per annum for each combined lock and weir. That includes everything.

598. There are six locks and weirs? Yes, I reckon that in some cases two men will be required constantly, while in other cases only one man will be required. Probably the outlay for wages would be £150 a year or thereabouts, while repairs, painting, and so on would come to about £100 a year.

599. Even if no river dues were charged revenue could be obtained from pumping licenses, and in other ways which, at a very low calculation, would probably exceed your estimate of the cost of maintenance? Yes.

600. *Mr. Fegan.*] You had a large experience in India? Yes.

601. Can you give us the benefit of your experience in connection with irrigation settlements there? The style of settlement there is quite different from what it is here; but a great deal of my Indian experience would come in usefully here. Locks are pretty much the same all the world over. Those here proposed are similar to what we had on the Lower Ganges canal.

602. The locks and weirs there were chiefly for irrigation purposes? Irrigation was the great object in view there. Navigation was a very small matter, though the canals were found to offer a convenient mode of transit in the cotton season. Navigation, however, was looked upon as quite subsidiary to irrigation, and provided only a small amount of revenue.

603. Can you explain to us how navigation and irrigation come into conflict, as mentioned by you in your former evidence? Putting the matter broadly, for an irrigation canal you want as great a discharge as you can get. You want to have your water running at as great a velocity as the ground will stand, in order that your canal may be small in proportion to the quantity carried. With navigation, on the other hand, it is necessary to have the water still, very much as it will be on the Darling when the river is low. In India, even where the labour is cheap, they find it very laborious to get the barges up the canals. They generally allow them to float down with the current, but coolies have to be employed to drag them up.

604. What kind of country do these canals go through? In the North-West Provinces the land is generally in the hands of large holders; but in the Punjab there is a great quantity of land of which the Government is practically the holder. The principle there is that the Crown holds all the land, while the people are really Crown tenants, having to pay the rates which are assessed on the land.

605. Has irrigation there been a success? It has been a splendid success, both in the North-West Provinces and in the Punjab. Taking India as a whole, irrigation has been remarkably successful there. The canals, both in the North-West Provinces and in the Punjab, pay very much more than the interest on the outlay.

606. What rates are charged? There they charge by the acre, and by the crop—so much for sugar-cane per acre, so much for indigo, and so much for wheat. Some crops require more water than others, and some want greater regularity and attention than others. Indigo requires great regularity, and so does rice.

607. I suppose these canals have almost changed the face of the country there? Yes. In the first place, a famine is almost impossible there now, though the time was when they had very severe famines.

608. At regular or at irregular intervals? A general scarcity was not a common occurrence, but occasionally the scarcity was very severe.

609. How have the works affected the health of the people there? I do not think they have made any appreciable difference in that respect. Indirectly, they may have made a difference, because population has become very dense in the irrigated districts.

610. Is there any part of India or of America where you have seen conditions prevailing and soil similar to the conditions and soil on the Darling? There is great similarity between the climate of the Punjab and the climate of Bourke and Brewarrina, except that in the Punjab there are six or seven hot months in the year, while there are only three or four at Bourke.

611. You are well acquainted with the land on each side of the Darling? Yes.

612. What kind of land is it? As a rule it is very fertile.

613. How many sheep does it carry to the acre? It varies a great deal. I remember when I was up there hearing people say that 5 or 7 acres were required to carry a sheep.

614. What use could the land on each side of the river be put to if it were irrigated? That land will grow almost anything. It has grown lucerne in places remarkably well, and there are several patches of irrigated land on which wheat is grown. Then, too, it grows fruit splendidly. There is a Chinaman at Bourke who has taught the people what can be done up there.—he has done wonders in the way of fruit and vegetable growing. At Brewarrina, too, the Chinamen have a small patch of land which is remarkably productive.

615. I suppose this country would feel a drought very considerably? Yes; the seasons there are very irregular. It is not so bad there, however, as further to the west and south-west.

616. But it is so bad that settlement has decreased? I am not sure that there has been a decrease; but if there has been an increase it has been very small.

617. Nothing in comparison to the increase that has taken place in other parts of the country? No.

618. If the land is good, and the climate fairly good, there must be something radically wrong? Quite so.

619. What you believe to be wanted is a good system of irrigation? Yes.

620. And that is what you now propose to give? Yes.

621. *Mr. Hassall.*] Do you think that if there were a permanently full river the people on the Darling would be induced to go in for irrigation? I think so. They certainly would do so if an Act were passed giving them a recognised right to the water. At the present time anyone who pumps water from the river does so only on sufferance.

622. Do you not think that if the people there wished to irrigate they would do so under present circumstances? No; because they have no security at the present time. If a man were pumping from the river, and the water fell very low, his neighbour lower down might compel him to stop pumping.

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623. Do you not know that a man is perfectly justified in pumping water out of the river when it is running? As the law stands a man has no right to pump out of a river.

624. Do you mean to say that a man owning land alongside a river has no right to pump out the water, supposing the river is running half bank high? Yes. A few years ago I was speaking to a well-known pastoralist on the Murrumbidgee upon the subject. I asked him if he was aware that he had no legal right to use his pumping plant, and he said that he knew perfectly well that anyone lower down could compel him to stop by threatening to apply for an injunction.

625. Well, in what way would you give people a right to take water supposing you locked the river? We want an Act passed to give that right. There is a Bill before the House at the present time for that purpose. That Bill, if passed, will enable the Government to give people the right to take water.

626. And you think that if a Bill were passed allowing the people to use the water, they would use it at once, without waiting for the river to be locked? Yes; but the Bill contemplates giving these rights only under certain regulations. These people will have to show that their pumping arrangements will not interfere with anyone else.

627. If the people felt the necessity for irrigation, would they not use the water that goes to waste when the river is running half or three-fourths bank high? A few of them do use it. I have a list of the places where there are pumping stations; but all these people take water at their own risk, and just at the time when they want it most, when the river is very low, someone who has a grudge against them might order them to stop, and they would have to stop.

628. Do you know any instance where such action has been taken? I do not know of any case where such action has been taken in connection with pumping schemes; but I know that people try to regulate their pumping so that they will not have to take much when the river is low, and thus lessen the risk of having an injunction taken out against them.

629. Do you think any person would prevent another from taking water from a river which was half full? Such a case is not likely to occur, of course; but it has often happened that people have cut dams simply to injure their neighbours, when their action could not possibly benefit themselves.

630. When you have your weirs will it not be necessary to keep the water in the river, in order to have sufficient for the navigation? The surface level above the weirs will be raised by 6 or 8 feet, and the river will keep at a steady level, which is a decided advantage to a pump.

631. Do you think that under ordinary circumstances people will be able to afford 5s. an acre for water? I do not know that there would be much use going into that question now in view of the Bill that is to be brought before Parliament. I base my calculation upon the American experience.

632. In addition to paying 5s. an acre, would the land-holder have to provide his own pumping apparatus? That was the original idea.

633. How far back from the river will you be able to send the water? It would not be advisable to send the water very far back if land suitable for irrigation could be obtained on the river bank, because of the waste in the channels. That has been the experience in Mildura.

634. But it has been stated that land lying within 3 miles of the river will be benefited? I consider that land even further away than that will be benefited, as I have already explained to Mr. Lee.

635. What you meant us to infer was that 500 acres of irrigated land would enable the holders of a large area to tide over a severe season? Yes; that has been the experiences in some places. Mr. Wills Allen, who would be a very desirable witness, would no doubt support that contention. At his place I saw 4,000 sheep on 200 acres, and they had been there for many weeks.

636. What was the crop? Lucerne.

637. You require pretty good land for lucerne? Yes.

638. Is the land along the Lower Darling equal to the land at Gunnedah? I believe that patches of it are very little, if at all inferior. Of course there are clay flats that should not be irrigated at all.

639. Do you not know that the land along the Lower Darling is not to be compared with the beautiful river flats about Gunnedah? I was on part of the Tapio Run near Wentworth, where they were trying how many sheep they could support upon an acre of lucerne. They kept on cutting the lucerne and feeding the sheep with it, and they found that in this way the land would support 23 sheep to an acre all the year round.

640. You contend that irrigation would materially increase the carrying capacity of this land? Yes.

641. And this would provide more traffic for the railway? Yes; and for the river.

642. And that if river dues were imposed the traffic on the river would pay interest on the cost of construction and working expenses? Exactly.

643. Do you not think that it would be more advisable to try and obtain artesian water? Artesian supplies are very good in their way, but the water obtained is more expensive than one might think. It is a very good artesian bore that will give a flow of 1,000,000 gallons, or less than 2 cubic feet per second, and that quantity of water, even with good management, would not irrigate more than 200 acres.

644. Therefore, to look to artesian supplies for irrigation purposes would be a failure? I would not say that.

645. *Mr. Black.*] What is the average cost of a bore? The Government bores cost from £2,000 to £3,000 each.

646. *Mr. Wright.*] I think you will find that private bores cost about £500? Well, there are very few places in this country where you can get water at anything like a moderate depth. Most of the Government bores start with a diameter of 8 or 9 inches and gradually decrease to about 5 inches.

647. *Chairman.*] Taking the experience of the colony generally, what does it cost to obtain a discharge of 2 cubic feet per second? I think about £2,000 on the average. In many cases artesian irrigation would be of considerable value. Every artesian bore, if properly managed, should be the centre of a patch of cultivation which would be very valuable in times of drought. One hundred acres of cultivated land would be a very good stand-by in such districts as those in which artesian boring is generally carried out. With this small amount of irrigation you might obtain a very large crop of hay.

648. *Mr. Hassall.*] Do you think it would be advisable to irrigate the land about these bores to grow forage for use in bad seasons? Yes.

649. Can you tell us whether the fact of the artesian water being mineralised would have a bad effect upon the soil? There are cases where such water would have a bad effect, but I understand that they are quite the exception. I have seen analyses of water from a large number of artesian bores, and I do not

not think any harm would be done by using such water. Certainly, if people irrigated one place one year and a fresh place the next year, instead of irrigating the same land continuously, no damage would be done even if the water contained a moderate quantity of mineral matter.

650. You would spell the land occasionally in order to enable it to recover from any bad effects of mineralised water? Yes. Cereals have been grown at a number of these bores very successfully. The chemist attached to the Mines Department has analysed a very large number of samples of water from these bores. He read a paper on the subject before the Royal Society, and I will send it to you.

651. Is the scheme proposed merely the initiatory step towards providing a perfect system of navigation upon the river? I have had surveys made for lock sites up as far as Walgett.

652. Then there is a probability of this locking being extended further? Yes; but in any case the work will take a considerable time to accomplish.

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Esq.

21 May, 1896.

FRIDAY, 22 MAY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. CHARLES JAMES ROBERTS, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.

JOHN LIONEL FEGAN, Esq.

THOMAS HENRY HASSALL, Esq.

GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Hugh Giffen M'Kinney, Esq., Chief Engineer, Water Conservation Branch, Department of Mines, sworn, and further examined:—

653. *Mr. Roberts.*] Was it not in 1883 that Mr. Gordon reported to a company on a scheme somewhat similar to this scheme? Yes.

654. Did the company decline to proceed with the scheme on account of their inability to see a satisfactory return for the expenditure? I have no direct information on the subject, but I understand that that was the case. Their object in getting the work done was merely to make the river permanently navigable. They had no other object in view. In fact, Mr. Gordon mentions in his report that if the question of utilising the water were taken into account, it would put a new complexion on the matter.

655. Do you know what rates they contemplated fixing for navigation dues or irrigation charges? They had nothing in view as regards irrigation, because they had no right to use the water.

656. It was intended strictly for navigation purposes? It was intended purely for navigation, and if I am not mistaken, the movers in the matter were directly interested in the stations fronting the Darling from Wilcannia to Wentworth. They simply wanted to get their wool to market, and to get up their stores.

657. In your statement to this Committee you assume that you will be able to conserve about 6,250,000,000 gallons of water;—how long do you estimate that that quantity will last in a season of drought? I do not think that that question would really arise, because the flow in the river above Brewarrina has never been known to stop. It is only lower down the river that the flow has been known to stop. My expectation is that that supply will be constantly replenished.

658. Do you think that in a season of drought there would be a sufficient supply flowing in the river to provide an adequate quantity for navigation purposes? Yes; but it would be necessary to arrange that no pumping would be allowed to go on when the river fell below a certain discharge; in fact, the pumping rights on the Darling would have to be graduated according to the height of the river.

659. In the report which you furnished in 1893 in conjunction with Mr. F. W. Ward, you say:—

We suggest 5s. per irrigated acre as a reasonable rate; but it has also been shown that in twelve out of fourteen years a large flow during the spring months can, judging from the past, be depended on. Rights to pump from this flowing supply, on condition that work should be stopped when the reading on the gauge falls below certain specified heights might be granted subject to reduced license fees.

Did you mean to suggest a charge of 3s. per acre when the river was flowing, and a charge of 5s. per acre for conserved water when the river was not flowing? That suggestion was not made with the idea that the storage would ever be allowed to become empty, but with the idea that the Government, having conserved that quantity of water, should get credit for it, and get revenue corresponding to it.

660. When do you propose that only 3s. per acre shall be charge? It was only a suggestion that when the river got higher and the supply was more abundant that a diminished charge could be made.

661. That is 3s. when the river was flowing, and 5s. for conserved water? Yes. The rates will depend very largely on the Bill dealing with riparian rights. The report from which you quote was prepared after an inspection at the end of 1892; but the whole question of water rights and pumping rights from the rivers, and such matters, are dealt with in the Bill which is now before the Assembly. In our report we suggested an arrangement which seemed to us to be a fair one.

662. Did you consider how the navigation dues would be collected,—would it be merely in the form of lockage dues? We thought that the Government had a fair claim to navigation dues, quite independent of lockage dues.

663. Did you suggest any rate? No.

664. In view of the fact that the entrances to the northern rivers are improved at a very large expenditure of public money, and that no charge is made in respect of such public works, do you think it is likely that the people along the Darling will be prepared to pay navigation dues? If no charge is made in respect of the works on the coast, there might be an objection made to the imposition of any charges on the Darling River. In a certain measure the circumstances are different. In one case it is tidal waters chiefly which are dealt with. Still it does seem to me to be a question whether the one case is not a precedent for the other. I think it would be perfectly fair for the Government to collect a rate in each case.

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665. In the one case the harbours are dredged, and the entrances to the river are cleared without any rate being levied upon the people who are directly benefited by the expenditure? It involves a question of State policy; but it seems to me that it would be perfectly fair to collect a rate.

666. You admit that probably no navigation dues would be collected? My opinion is that they should be collected.

667. Do not you think the people would look upon the river as a highway in the same way as they regard a river where the entrance has been improved and the sand-banks removed? Probably they would; it is a matter of State policy.

668. I think you stated that in France these streams, where locks and weirs have been erected, are looked upon as highways? They are.

669. And no charge is made? That is not the general rule.

670. Are dues imposed? Dues are imposed in Russia; I have a note of the dues which are collected in different European countries where there is inland navigation. I am almost certain that France is the only country in which such dues are not collected.

671. Will you furnish that information to the Committee in the form of a return, stating whether the works were erected by the State or by private enterprise? Yes.

672. Did the Water Conservation Department call for tenders, in 1895, for an experimental lock and weir at Bourke? Yes.

673. Did you prepare the plans and specifications? They were prepared under my direction.

674. Why is it termed an experimental lock and weir? That is what it was termed in the papers. The idea was that it would form a model for others that were to follow.

675. Have you any doubt as to its efficacy? I have none.

676. Are the works which are now being considered by the Committee based upon similar plans and specifications? There are slight alterations in small details, but the whole principle is the same, and the general design is the same.

677. Have you inspected the work which Messrs. Kerle and Kerle contracted to construct for £18,800;—is that work going on at the present time? It is just being started, directly under the Government.

678. Have Messrs. Kerle and Kerle thrown up the contract? Yes.

679. Is the work progressing satisfactorily? It is only within the last four or five days that we got the temporary dam up to about water level. We have been getting the materials on the ground and making all arrangements to push on the work quickly. The river is low enough to carry on the work, but the place all round the foundation is very muddy, and it is difficult for the carts to work. It may be another week before we get into full swing.

680. When will the work be completed? If we have anything like the good fortune which Kerle and Kerle had, we shall have the work completed in three or four months.

681. You have no doubt that the lock and weir will come up to your expectation? No.

682. Had you, prior to drawing your plans, seen similar work in any other country? I had the immediate charge of the building of several locks, the style of which is very similar to this one, and as to weirs, I must have had a couple of score of them to build in my time. The weirs were different, certainly, in some respects from this weir.

683. Have you gone through all the details of the proposed works which you estimate, I see, to cost £121,100? I went through all the details in regard to one lock and weir, and these have been prepared in my office I believe with every degree of care.

684. Based on the tenders you received for the work which is now going on? Yes.

685. Will you explain what increased traffic will accrue to the railway from this work? We anticipate as a result of these works that settlement will be promoted to a very considerable extent, that it will pay people to take up smaller areas, and that it will also pay people to irrigate areas of land. The irrigation of these areas will increase the stock-carrying capacity of the country along the river, and that will increase the traffic materially, and so will closer settlement and cheap carriage. These are all elements intending to increase the trade.

686. You assume that an agricultural population will probably be settled upon the banks of the river? To a certain extent. But even supposing that an agricultural population do not settle there; supposing that they resort to a certain amount of irrigation as an adjunct to pastoral occupation, that I believe would add very materially to the traffic. I do not think that the members of the Committee could do better than go up to Gunnedah and see the works belonging to Mr. Wills Allen. It would give a good idea of how irrigation can be carried on in connection with pastoral work.

687. You think that pastoralists would combine agriculture with sheep-farming? Probably for the irrigation of fodder crops.

688. Principally for home consumption? Yes, in order to help them to tide over a bad season. I have heard from several very successful pastoralists that they consider that a very moderate area of irrigated fodder crops materially increases the carrying capacity of the whole run, because they feel safer as regards stocking-up.

689. Do you think the Government would get any increased return from the lands if this scheme were adopted? Yes, decidedly.

690. I suppose the value of the land, for a considerable distance, would be greatly increased? I think so.

691. You think that the Government would receive more indirect advantages than a direct financial return? Quite so. I think the indirect returns would really be the most important.

692. You think it is more desirable to carry out this work for irrigation purposes than for navigation? It is carried out for both purposes, but I think the increasing of the productiveness of the land is the more important object in view. Cheap carriage would tend to increase the productiveness of the land.

693. Have you any idea of the views of the residents on the river, or the views of the people at Bourke or Brewarrina? As far as I am aware they are pretty nearly all in favour of this system of locking the river.

694. Does it not strike you that the Brewarrina people would prefer a railway to Byrock;—have you not heard it said that they would? That is just possible. Very often the people in country districts prefer whatever causes the expenditure of a larger sum in their neighbourhood. The railway would be the more costly of the two things, and I suppose would bring more money into Brewarrina for the time being. It is very likely that the Brewarrina people would not look beyond that phase of the question.

695. Have you heard on the spot that the people of Brewarrina would prefer a railway to Byrock? I have not heard them say so, but I could quite understand that some of them at least would say so.
696. The Bourke people, probably, favour the river scheme? Yes; and I think the people generally along the frontage do too. After all, it is the people who now occupy the land and the people who will occupy the land who have to be considered more than the people in the towns.
697. Have you heard any of the residents express their willingness to pay navigation dues or irrigation charges for any benefits they may derive from this scheme? I recollect some of them telling me that if they had a definite right to a certain quantity of water they would be quite willing to pay a fair sum for that water. I have been told that frequently, but it was said more especially with reference to a Bill dealing with water conservation.
698. You stated that the present lock and weir would be finished in three or four months;—how long do you think it will take to carry out the proposed locks? The Darling is a very uncertain river. But supposing that Parliament approves of this scheme, I could start the next two locks—the one at Stony Point and the one at Vincent Rocks—within ten days.
699. You would not like to say how long it would take to carry out the whole scheme? No. But supposing that I could start a month hence with the two locks I mentioned, and the river kept low, I could have those locks finished in six months from the time I started, and if I got a second period of low river, I could finish the next two locks in another six months from that time.
700. Given favourable weather, I suppose the whole work could be carried out in about eighteen months? Yes; but we could not hope for the river to remain so low for the whole of that period. We are bound to have some interruptions.
701. *Mr. Wright.*] Have you looked up any information for the Committee as to irrigation works in Australia that are paying? I have looked up my notes. I can mention only a moderate number of such works. I can cite fruit orchards where irrigation pays. I really know of only two good instances of well-managed irrigation on pastoral stations—at Mr. Wills Allen's, and at Mr. Gatenby's at Jemalong. These are the only two instances of irrigation of this kind on an extensive scale which has been managed in a rational way.
702. Have you an intimate knowledge of Victoria? Yes.
703. Are the various water trusts which were formed in Victoria, and which borrowed large sums to conserve water for irrigation, prosperous? No; they are even worse than the towns in this country which borrowed large sums for constructing water-works.
704. Is it not a fact that the great irrigation schemes of the Victorian Government cost, either directly or through water trusts, £5,000,000, and that they have absolutely failed to produce any irrigation farms other than the two on the banks of the Murray? I do not think they have spent nearly half that amount. I think they have spent £1,500,000.
705. The Government have spent a certain sum directly, and the water trusts have borrowed money under Government sanction? The principle on which they went is entirely wrong. The lending of money to water trusts has been proved to be a complete failure.
706. Has the application of the money produced any successful result in encouraging irrigation? I believe it has, but the expenditure on the works has been far too great under the circumstances.
707. Is it a fact that the whole of the trusts are asking the Government to relieve them of their responsibilities because they cannot let the water which the people should take for irrigation purposes? I do not know. I was talking the other day to a Victorian gentleman in Sydney, and he said that last year a very large number of people would have been very hard pushed to remain on their properties but for the water which they got for irrigation. I do not at all agree with the policy they have adopted in Victoria in regard to Mildura or the irrigation trusts. I think in each case the policy adopted was wrong. On the other hand, I have seen a number of very successfully irrigated farms in Victoria. I know a number of cases where men from small beginnings have become quite independent by the use of irrigation.
708. Can you give the Committee any statistical information mentioning the names and the localities where this success has been achieved? I can mention a few places, and I can get more from my notes. It is a good many years since I visited these places. It must be 6 or 7 years ago.
709. I want a return of irrigation farms in Victoria which are carried on successfully still? I cannot tell you anything about their present state. I know that a number of them did extremely well up to the time I was in the colony.
710. Can you state how much the Government or the trusts charge for water per acre? I have not got the most recent charges. I will telegraph to Mr. Stewart Murray and get the information.
711. You have had considerable experience in India? Yes.
712. You are aware that the difference between Hindoos or Bengalees and Australians is very great? Yes.
713. In India labour is paid very little, and the irrigation schemes are carried out on an enormous scale? I do not know that water is obtained any cheaper there than it has been obtained in some places here. In India the cheapest water is obtained from the so-called inundation canals, but in the case of the large canals the rates are not very low. In my time the rate for irrigating sugar-cane was 6 rupees per acre, that is 12s., and the rate for irrigating wheat was 2 rupees and 12 annas, that is about 5s. 6d.
714. In those cases the water was delivered by gravitation? Yes.
715. Do you think an Australian farmer would pay you 5s. an acre for the water, and then pump the water from the Darling? I do not think the farmers of Australia are inferior to the farmers in the Western States of America—at least they ought not to be inferior. The climate is very similar to ours, we belong to the same race, and labour costs as much there as it does here.
716. In the great wheat-growing districts in America there are no irrigation works? If you will look up the report of the Select Committee in the United States Senate you will find it is stated that the crops irrigated successfully in the Western States include every kind of crop—from those grown in Norway to those grown in Egypt. They generally consider that they get much better crops where they use water. Unless it is admitted that the Australian is greatly inferior to the American, I do not see that there can be any possible doubt about irrigation paying here.
717. Have you studied the irrigation system of California thoroughly? I have read a good deal about irrigation in California and Colorado. I do not say that I know everything about it.
718. I suppose you are aware that all the modern irrigation for fruits and vines is subterranean irrigation? I beg your pardon; there is a great deal that is not subterranean. In fact some of the recent fruit-growers have come to the conclusion that subterranean irrigation is a mistake.

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719. It is the most expensive system in its initiation ; but you will admit that it is the most economical way of using water for irrigation ? Yes.
720. Will you not also admit that the subterranean system must be more efficacious than the system of pouring water on the surface of the soil ? That is a question for an expert fruit-grower to answer. I know that some fruit-growing authorities say that they do not consider it is so beneficial to the trees.
721. In the report you wrote in 1893 in conjunction with Mr. F. W. Ward, you dwell extensively on the fact that along the Darling stone fruits, citrus fruits, and the vine are largely cultivated ? We mentioned that fact from actual observation.
722. And you also referred to the growth of these things with the assistance of irrigation ? Yes.
723. I suppose you are aware that on the eastern rivers tens of thousands of acres of land which is naturally irrigated by a rainfall, and is in every way suitable for the culture of the vine, stone fruit, and citrus fruit, are at the present time not utilised ? In view of that fact, do you think that it would be wise to go into the far west, and construct expensive irrigation works to do that which we can do on the coast without any artificial aid ? I do not see that the western country should be sacrificed for the benefit of the coast districts. The conditions in the west are, in many respects different, and I have no doubt that they would find that they could produce some fruits there better than those fruits could be produced on the coast.
724. In your report you also express your belief that water will be taken by sheep farmers plentifully at a cost of from 6d. to 1s. per acre ? I should certainly say that they would be glad to get the water at that rate.
725. From your knowledge of the topographical features of this country, do you think it is possible for a man to make any attempt to irrigate a large sheep run ? There are a few cases where a man could irrigate a considerable area, but those cases are remarkably few.
726. River flats ? Down for instance on the lower part of the Lachlan or the lower part of the Macquarie, where the river banks are a good deal higher than the land adjoining.
727. But to irrigate a large area would it not require an extensive outlay in ditches to lead the water ? A considerable outlay. The most extensive irrigator a few years ago in the colony among pastoralists was Mr. James Tyson. He expended a good deal in the construction of channels for that purpose. He is generally credited with not being rash, and entering into speculations. I was told on good authority that he had spent not less than £15,000 on the Lower Lachlan.
728. From your personal observations of the country do you think it would pay a sheep-farmer to incur the expense of making ditches or channels to irrigate a very large area, and to pay 6d. or 1s. per acre for the water ? It would not, except under very favourable conditions.
729. Unless he had large flats near the river ? It all depends upon the conditions.
730. You are aware that there are large flats on the banks of the Darling known as grey or blue slate, with a stiff clay soil ? I believe so.
731. You could not irrigate that country ? It is unsuitable for irrigation.
732. As regards the irrigation schemes in California, I suppose eight-tenths of them are gravitation schemes ? A large proportion of them are gravitation schemes ; but there is a good deal of irrigation from artesian wells there. In the western states many hundreds if not thousands of artesian wells are used for irrigation purposes.
733. What would it cost a man to irrigate say 10,000 acres, three times a year, on the banks of the Darling ; what would it cost him for pumping supposing it was flat land ? I could not say on the spur of the moment.
734. Supposing that he had to lift the water an average height of 25 feet to irrigate 10,000 acres three or four times a year ? The irrigation of 10,000 acres would be a tremendous undertaking by pumping in one place.
735. Supposing he had to lift 4 inches of water three times a year to irrigate 1,000 acres ; what would it cost to lift that quantity ? Roughly, perhaps 5s. or 6s. an acre ?
736. Would it pay a man to incur that expense ? For certain kinds of crops I think it would, supposing that he increased his production in proportion to his expenditure.
737. Does 10s. an acre exceed the cost which is paid in most countries for water, or is it less ? I do not think it is much different. I believe it is slightly higher than the average in the United States. It is not pretended at all that the conditions are anything like as favourable for irrigating from the Darling as they are for irrigating from the Murray or the Murrumbidgee.
738. Do you think it would cost from 10s. to 12s. an acre to irrigate from the Darling ? Yes ; speaking roughly.
739. You admit that no man could afford to irrigate his land at that cost, unless it was for producing cereals, fruits, or vegetables—he could not afford to irrigate ordinary land for pastoral purposes ? Not simply for grazing, but for a good class of fodder crops I believe it would pay.
740. Where you had a deep alluvial soil which would grow lucerne, it would pay ? Yes.
741. It would not pay a man to irrigate stiff clay soil ? A man with good judgment would not attempt to irrigate such land.
742. You are quite satisfied about the construction of the proposed weirs ? Yes.
743. Was the weir you are constructing disturbed or interfered with at all by the slight fresh in the river some time ago ? It was.
744. Was any damage done ? Where there was excavation done for putting in concrete a certain amount of silt was washed into the excavations.
745. That had to be filled up ? Yes.
746. The clearing out of the silt would not cost much ? No.
747. The contract was for £18,800. About how much has been paid to the contractors ? About £6,600.
748. Have they done a third or a fourth of the work ? Roughly speaking I should say less than a fourth.
749. Still you are satisfied from your personal knowledge that you will be able to complete the work by day labour at about their estimate ? Not altogether by day labour. We are using piecework and petty contract as far as we possibly can.
750. I understand that it is not sufficiently advanced to try the shutter principle ? No. Most of the work which has been done is in connection with the lock walls.
751. You have no doubt as an engineer that the weir will be a success ? None at all.

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752. There will be no danger of its being pounced upon by a big flood in the night time unexpectedly and swept away? I have no fear of that kind. It is a much easier river to deal with than any rivers I know of on which these weirs have been tried. The floods in the Darling rise very slowly. There is always ample opportunity to get information. The only occasion when the river rises at all suddenly is when a phenomenal rainfall takes place, like what occurred in 1885. But to meet that contingency the weirs will tilt and allow the water to flow over.
753. In view of the state of the law regarding riparian rights, at the present time the Government could not sell water very well? They would not be in a good position in regard to riparian rights.
754. Could not a dozen men below the lock petition against the Government utilising the waters of the river? They probably would. But any man would hesitate about going to law with the Government on that subject.
755. I think you stated yesterday that anyone could get an injunction to prevent any person from taking water from a river or creek. You have heard of the Yanko Creek case? Yes.
756. A large quantity of water was taken out of the Murrumbidgee to supply the Yanko Creek, and the people of Hay tried to restrain the station people from diverting the waters of the Murrumbidgee into that creek, but they did not succeed? I know that in the case of Colombo Creek, the owner of a certain station said he intended himself to cut the dam leading into Colombo Creek from Yanko Creek. I know it was considered that the only way to deal with the question was to bring Colombo Dam under the Public Places Watering Act, and to proclaim the dam to be a public watering place.
757. You have no recollection of the people of Hay moving to restrain the people on Colombo Plains from allowing the water to overflow? I was present at a conference on the ground near Yanko Creek at the end of 1884. The Hay people did protest against certain works being undertaken, but finally they withdrew their protest when it was explained that the proportion of water to be taken would be extremely small—about 2 or 3 per cent.
758. The works were authorised by me when I was Minister for Works? Yes; the improvement of Yanko Creek was authorised by the Government.
759. As an engineer with a large experience of irrigation works, you think that if these works are successfully carried out on the Darling River, there will be a great chance of the water being utilised for irrigation purposes? I do.
760. You think, that at the present rate of wages, people could afford to use water at a cost of 10s. per acre? For certain crops they could. In fact they could pay much more than that rate for certain crops. I know a man who has spent £200 on a pumping plant and piping to irrigate 10 acres, and he is well pleased with his investment.
761. In your evidence yesterday you spoke about the irrigation works at Mulgoa;—do you know that country? I know it very well.
762. Would you consider a clay surface, with a shale bottom, a suitable place for carrying out irrigation works? I would not. I was not aware that that was the nature of the ground.
763. *Mr. Black.*] On an irrigated area the expense of cultivation is necessarily greater than it is on an unirrigated area, all other things being equal? Yes.
764. Therefore, the irrigated area to be successful must either produce greater crops than the unirrigated area, or else it must supply a want in the local market which has been hitherto met by bringing products from a great distance? Precisely.
765. Do you think that with irrigation the land near the Darling under cultivation would produce greater crops than are produced without irrigation in areas now under cultivation elsewhere? I consider that when irrigation is practised there, it will supply fodder and probably grain crops to the district, for which they have to pay high rates now.
766. Will there be a local market for their produce? There will for a certain quantity of fodder and things of that kind. It does not seem reasonable that they should be taking up lucerne from Sydney and importing things from Victoria when they grow these things on the ground.
767. If there were a surplus product there, do you think that after paying the cost of irrigation and water carriage and railway carriage it could compete in the large markets of this country with products which were grown nearer to those markets, and which were not rendered dearer by the cost of irrigation? I believe that in certain items they could.
768. What are the items? I believe there is a season of the year when it would pay to send fruit from the Darling to Sydney. I have seen grapes at Bourke three weeks before they appeared in Sydney, and very good grapes too.
769. Do you think fruit-growing is a pursuit which would be entered into largely there? I do not.
770. Do you think it will induce the settlement of other persons who will grow fruit? I think there is a very fair chance of its bringing a number of them there. Certain places in Western America, which are not as suitable as the Darling, have been occupied by fruit-growers.
771. With regard to heavy floods,—is there any danger, during the subsidence of a heavy flood, of the river cutting a new channel for itself? It frequently does that.
772. Would not that, perhaps, in many cases render your locks and weirs useless? No; we have to take every care in the selection of the sites to avoid anything of that kind.
773. You think you can select your sites in such positions that your weirs would not be rendered useless by the floods cutting new channels? I do.
774. Is there any danger of the locks getting silted up during heavy floods? I do not think so. I think there will be a certain tendency to scour in the channels immediately below the locks. For that reason a considerable area of the bed of the river below the locks will be protected by pitching. I do not think there is any likelihood of the depositing of silt.
775. Is there any danger of the depositing of timber? I do not think so. There is not a great deal of floating timber in the Darling. When it came down the river it would go right over the top of the works.
776. Is it not possible that there will be a fall which will deposit timber there? It is improbable. There is very little timber deposited along the river. There is always a chance that a log, as the river goes down, may get caught in that way.
777. Do you propose to construct your locks by cutting across the bends of the rivers? No; it is better to avoid these bends, because it is nearly always low ground there. As far as we can we select a straight reach of the river. At Bourke the straight reach is only about 400 yards long.

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778. Your lock will be slightly curved? No, it will be quite straight. We select a straight reach of the river whenever we can, so that there will be a steady current and no tendency to silt up more at one point than at another.
779. In your estimate, instead of estimating the cost of the weirs at so much, you simply give the aggregate cost of material? Yes.
780. Is there any reason for doing that? That appears to be the usual custom.
781. I thought the other was the custom? In the case of a new railway which was referred to the Committee the different items I observed were lumped together, and I followed the same practice.
782. Is your estimate of £121,100 supposed to cover the total cost? Yes.
783. Does "supervision and contingencies" include labour? No; each amount represents the total cost of that particular item.
784. Not only material, but labour? Both material and labour. For instance, concrete includes supplying the materials, mixing the concrete, and putting it in position.
785. I do not see any estimate of the cost of survey, snagging, and dredging;—are they included also? I did not include the cost of original surveys. The expenditure was not heavy.
786. I suppose there will be other surveys before you begin the work? No; at every site we have taken borings.
787. You have decided the position of every lock? We have decided the position of all the locks.
788. Will there be no preliminary engineering expenses as well as the expenses of snagging and dredging? I do not contemplate any.
789. If, by locking the river, it is made possible for steamers to run regularly, the average tonnage per month would be 1,000? I do not think it would.
790. Do you not think that the people who are likely to take advantage of the cheapness of river carriage will order their stores to be landed while the river is running, and that they will order supplies of sufficient magnitude to carry them over possibly a dry season? That is done to a certain extent now. If there were permanent navigation a great deal of the traffic which goes now by road would go by river.
791. Presumably also there would be increased settlement? Quite so.
792. You think the tonnage carried on the river during the intermittent periods, when it is running full enough to permit of navigation, may become an average tonnage, or may even fall below the average? My idea is that there will be a steady increase.
793. *Mr. Humphery.*] Have you prepared a return for the Committee showing the details of the cost of the locks? I have.
794. *Chairman.*] Have you brought any statement in regard to the soakage? I do not recollect being asked to get that information. It is very difficult to get the information in the case of the Darling. It would be impossible from the nature of the river to furnish any calculation which would be reliable.
795. Can you make an approximate statement? No. At some places beds of sand crop out on the river-bank. The water goes back to a certain extent in these beds, and when the river falls below them it oozes out and goes back into the river. That fact would complicate any return about soakage.
796. Have you brought any statement with regard to the evaporation? I have ascertained the amount of evaporation. I was unable to get the figures for Bourke or Brewarrina. As far as I can understand the evaporation gauges have been removed from those places. In 1893 it was 63 inches at Walgett, 61½ inches at Wilcannia, and 63½ inches at Dubbo.
797. The mean of these three would be a main average to take? It would be pretty nearly 63 inches.
798. Have you brought a statement in regard to the amount of water which comes into the river at Brewarrina? I have a discharge table for Bourke. Our discharge observations are much less complete for Brewarrina than for Bourke. It is not a good place for taking discharges, as the currents are very much influenced by the presence of rocks.
799. Will you furnish the Committee with a fair approximation presently? Yes.
800. Do you know what comes down the Culgoa? We have no discharges for the Culgoa.
801. Do you know what comes down the Bogan? No. We have no information as regards these rivers, because it is only in flood-time that they bring anything worth speaking of into the Darling.
802. Do you know the amount which comes down the Bokhara? No. As regards the tributaries of the Darling between Bourke and Brewarrina, we have no information on that head.
803. Have you the discharge at Bourke? I have the discharge at Bourke in the form of a diagram, which I will hand in.
804. Have you any levels from Bourke up to the Culgoa, the Bokhara, Calto Creek, or the Bogan, into which water, to a greater or lesser extent, will be backed up by the erection of your weirs? I have levels at different places crossing these rivers; but I have not a regular line of levels in any case up the channels.
805. You cannot tell us accurately the area of your impounding basins which will be created by the weirs? Not accurately; but we have enough information to show that in comparison to the quantity of water stored in the river channel the quantity held up in these different channels by the weirs would be very small.
806. We can regard your statement as a correct approximation? Yes.
807. You cannot tell us how far your weirs will force the river up any of these tributaries of the Darling? No; I know it is only a short distance, because they are all more or less silted up near the mouth.
808. Can you cite any place in the world, where irrigation has been a commercial success, where the water has to be lifted a height of 35 feet? There is a multitude of instances.
809. Will you furnish the Committee with a list of the instances? I will endeavour to get the list of the places in Western America, because the conditions there are very similar to the conditions here, and the cost of labour is very similar.
810. That is a list of places where they lift the water a height of 35 feet, and where irrigation is a commercial success? Quite so. While it might pay handsomely to irrigate one class of crop, it might be a complete failure to attempt the irrigation of another class of crop. Irrigation might pay handsomely where water was pumped 50 feet if it was for an expensive class of crop.
811. From the Departmental report on artesian boring, I find that the flow from the Native Dog Bore which cost £1,000 to put down, will enable an area of over 1,280 acres to be irrigated to the extent of 20 inches per annum; £10,000 expended in the vicinity of that bore will enable an area of 12,800 acres to be irrigated.

irrigated; your expenditure, presuming that it is all incurred in the interest of irrigation, in order to give a like area a like amount of water, is over £100,000; while at the Native Dog Bore the water comes to the surface or above it, you have to lift your water a height of over 30 feet to get it on to the surface;—do you see the point of my remarks? The figures in regard to that bore certainly surprise me. I do not know who is responsible for the figures—I know that I am not.

H. G.  
McKinney,  
Esq.

22 May, 1896.

812. If these figures are at all an approximation, by artesian water, provided that it is suitable for the purpose, you get for £10,000 for irrigation purposes a supply of water equal to the amount you impound for £100,000, without including the cost of pumping? That certainly is a very exceptional bore. A very successful artesian bore does no doubt give cheap water.

813. Over such areas of land as you propose to irrigate from your weirs, a flood, will pass at any exceptional rainfall? In the case of very exceptional floods like that of 1890, or that of 1870.

814. If you irrigate land which floods will not reach, you have to pump your water a greater height? Yes. Generally speaking, it is likely that irrigated land will be flooded at times, perhaps once in fifteen or twenty years.

815. There will be some damage to be considered then? Yes, but at remote intervals.

816. The good result to the traffic of that portion of the colony would be the saving of the heavy rate of carriage from Brewarrina to Bourke;—it means the substitution of a good river for a bad road? Yes.

817. According to Mr. Shainwald the amount of traffic using the river in 1892 was about 8,000 tons; the work proposed to be constructed in order to enable that tonnage to reach Bourke or Brewarrina regularly will cost £4,000 a year interest; and the maintenance of the work in connection with the locks will cost £1,500 a year, so that without taking into consideration any undue expenditure it will cost £5,500 a year in order to get 8,000 tons of produce to use satisfactorily the river between Brewarrina and Bourke;—in other words, it will cost the State 15s. for every ton that goes down, that amount, of course, being lessened if the traffic increased much? I see that.

818. If every ton of stuff using the river would cost 15s. to the State it would be reasonable, provided we regarded purely the question of carriage, that the State should charge dues to that amount per ton? If it were regarded purely for the benefit of navigation and nothing more.

819. With regard to carriage, Mr. Shainwald has also informed the Committee that 10s. a ton will possibly be a fair thing to charge, and therefore the cost from Brewarrina to Bourke would mean 25s. a ton;—he also stated that when the river is pretty good they take freight up the river for 20s. a ton;—does it not follow that at these times, when they would have the advantage of the river being up, they would be better off than they would if the State made a fair charge for doing this work under the new system? I will think over that aspect of the case.

TUESDAY, 26 MAY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHREY.  
The Hon. CHARLES JAMES ROBERTS, C.M.G.  
The Hon. WILLIAM JOSEPH TRICKETT.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
THOMAS HENRY HASSALL, Esq.  
GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Henry Chamberlaine Russell, Esq., C.M.G., B.A., Government Astronomer, sworn, and examined:—

820. *Chairman.*] Do you know the Darling, between Bourke and Brewarrina? I have not been along the river, although I have been to Bourke. I know the character of the river, so far as it affects my work.

821. Can you tell us the boundaries of its catchment area above Bourke? The catchment area above Bourke is practically bounded by the railway from Bourke to Nyngan; thence by the Bogan to its source; thence to Molong, Orange, Bathurst; thence to the main range, following that range to the Queensland border; thence following the Macintyre River till it crosses the 29th degree of latitude; thence by the 29th parallel to the Culgoa, and thence to the Darling.

822. Water falling west of the Culgoa will not reach the Darling above Bourke? No.

823. Can you give us the area of the district enclosed within the boundaries you have mentioned? Approximately the area of that district is 73,400 square miles. Of course you will observe that I have said nothing about the large drainage area of the Darling which is in Queensland. The Queensland area contains approximately 40,000 square miles.

824. Have you tables which show the amount of water passing down the Darling for a period of years, and at various times in the year? I have that information tabulated, but I have not brought it with me.

825. What is the average rainfall upon the New South Wales portion of the catchment area of the Darling? The rainfall on that catchment area varies from 18½ inches to 35½ inches in the neighbourhood of Armidale.

826. What would be a fair average? The average of 16 years is 24·59 inches.

827. And what is the average rainfall upon the Queensland drainage area? 30·28 inches. The Queensland rainfall does not differ materially from the New South Wales rainfall.

828. What proportion of the rainfall reaches the Darling at Brewarrina? Less than 2 per cent.

829. Would the same remark apply to Queensland? Yes. I think so.

830. What amount passes down the Darling at Bourke;—would you give us the information for a term of years? I have that information for Bourke. Bourke is the only place where the quantity of water can be accurately determined, because that is the only place where I have a section of the river. The volume of water passing down the Darling at Bourke is 2,350,000,000 tons of water equalling ⅓ of an inch of rain over the catchment per annum.

H. C.  
Russell, Esq.,  
C.M.G., B.A.

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831. What information have you to give us about the evaporation in this district? The following table shows the total yearly evaporation at Walgett since 1886. The average evaporation during the last ten years has been 59½ inches, while the average rainfall during the same period has been nearly 23 inches.

Year.	Wind.		Evaporation.			Total rain.	Mean shade temperature.
	Total number of miles.	Average per day.	Total evaporation.	Average per day.	Greatest evaporation on any day.		
		miles.	inches.	inches.	inches.	inches.	° Fah.
1886	38,625	109	60·798	0·167	0·561	28·35	67·7
1887	33,139	99	54·194	·148	·524	27·62	66·9
1888	32,560	103	65·252	·179	·567	9·79	68·2
1889	32,784	105	58·952	·162	·480	32·02	68·6
1890	27,816	84	48·281	·132	·734	32·22	65·7
1891	28,123	99	54·780	·150	·521	24·95	64·9
1892	30,282	92	64·534	·177	·471	14·59	68·5
1893	27,050	95	63·017	·173	·504	20·45	66·3
1894	30,429	88	57·327	·157	·468	21·84	68·1
1895	25,318	81	68·153	·187	·530	17·58	67·1
Means and Extremes...	Mean, 30,613	Mean, 96	Mean, 59·529	Mean, 0·163	Extreme, 0·734	Mean, 22·99	Mean, 67·2

832. The effect of the evaporation in comparison with the rainfall is a net loss of about 37 inches? Yes.

833. Were not some experiments made in England, during a great number of years, to determine this question of evaporation? Yes; but I think the most exhaustive experiments have been made in India.

834. What was the result of the Indian experiments? I have not got any particulars about them; but I have particulars about some experiments made in England by Sir James Lawes.

835. Have you any idea as to how much of the water which falls upon the catchment area of the Darling percolates far below the surface? Well, no experiments have been made; but nearly the whole of the rainwater disappears below the surface. We know that less than 2 per cent. of it goes into the rivers.

836. Can you give us any opinion as to what becomes of the rest? I think nearly the whole of it goes into the ground. In some places the water disappears as fast as it falls. For instance, nearly the whole of the rain falling in the neighbourhood of Lake George disappears in that way. The rise of the lake is due to the quantity of water falling directly on to its surface. In any ordinary rain the whole of the water falling upon the catchment of Lake George sinks underground.

837. But there is some evaporation? Yes; though I cannot ascertain how much.

838. There is no information available? The only information available does not reach the question at all. It consists of some experiments which I have made at the Observatory, in order to see what the evaporation is from shallow surfaces of soil.

839. How would you view a statement of this kind: "That no filtration takes place on an average during five months of the year in England; and that periods of seven months frequently occur during which the water falling from the clouds is evaporated before it can pass to a depth at which capillary attraction and subsequent evaporation takes place"? I have no experience. I know that a great many experiments have been made in England to ascertain what they call there the water level;—that is, the depth to which you must sink your well in order to find water. I am not at all sure that the results of those experiments would be available for our purpose, because the rainfall in England comes down as very light rain, much lighter than it does here, while rain falls much more frequently.

840. The water falling on the catchment area of the Darling disappears so rapidly that you have no doubt that only a very small proportion goes off in evaporation? Yes; I find that as soon as the ground surface dries after rain to the depth of half an inch, evaporation practically ceases.

841. Do you know the extent of the cretaceous formation in which the artesian water is found? No.

842. Does it embrace the greater part of the water-shed of the Darling? I understand that it embraces a large area, but I have no personal knowledge of it. Recently water has been found in other formations besides the cretaceous.

843. Do you regard our subterranean water as an abundant supply? Yes, as an extremely abundant supply. The word "abundance" is rather indefinite in this sense. If irrigation by means of underground water became general, and wells were established at short distances, the experience here might be the experience of some parts of England, as in the neighbourhood of Liverpool, where they found the water-level to be sinking. I do not think we are in a position to state yet how much water is actually available from underground sources. There is an enormous quantity, but I should not like to say how much.

844. If 93 per cent. of the rainfall reaches this great subterranean reservoir, there must be a huge supply? There is one important point upon which we have no data at all. This subterranean source must have an outlet into the ocean somewhere. That, I take it, is proved by the fact that during all the generations and years that have passed, water has not been found coming up to the surface anywhere inland except in minute quantities from a few mud-springs. But water has always been soaking into the ground, presumably at the same rate as it does now. That being so, it must be that it ultimately finds its way into the ocean somewhere.

845. Is it not a fact that fresh water is found in the ocean on parts of the South Australian coast? Yes, and fresh water runs out through the limestone there; but I do not think we can estimate the quantity conserved until we know more about the outlet. Or, to put it in another way, we may go on making wells until the level of the water begins to fall in all the wells: then the outflow of the wells will be the measure of supply, for it is evident as much is coming out as goes in.

846. The water conserved must be subjected to a good deal of pressure to rise as it does? Yes.

847. You believe that we have a very large subterranean supply which is continually being replenished, but you have no definite data to enable you to say exactly what are its dimensions, or whether its permanency would be affected by its use to a large extent for irrigation purposes? Its permanency I think would not be altered; but its quantity would.

848. Although we shall always be able to get some water from this source, you do not know whether we should be able to get an unlimited supply or supply sufficient to irrigate the vast western interior? I do not think that that question can be answered yet.

849.

849. Would you regard it as a safe thing to expect a permanent supply sufficient to irrigate 50,000 acres? I should think so.

850. Or perhaps ten times that area? Possibly.

851. Do you know anything with regard to the quality of this subterranean water? Only what I have read about it.

852. You can express no opinion as to whether its mineral ingredients would unfit it for irrigation purposes? No; I cannot answer that question. I hand in a map upon which is marked the average rainfall upon each square degree of the catchment area of the Darling in New South Wales, the greatest quantity of rain that has fallen in any year, and the least quantity of rain that has fallen in a year.

853. *Mr. Wright.*] How far back do your authentic records go? We have records of the rain measures from 1871 or 1872. I also hand in a pamphlet containing a diagram showing the character of the floods in the Darling at Bourke up to 1896.

854. *Chairman.*] Would the conservation of water in a narrow strip such as the Darling have any climatic effect upon that portion of the colony? I think not.

855. Would the conservation of water in depressions such as there are in the western districts have any climatic effect? When they commenced irrigation in Italy, in the valley of the Po, large areas were involved, and the engineers expected a considerable increase of the rainfall, but the water conservation did not affect the rainfall in the least.

856. Has deforesting an effect upon the rainfall? The general opinion is that to cut away trees is to decrease the rainfall; but personally I am convinced that that is a mistake. It is the rainfall that makes the trees, and not the trees that make the rainfall. I have investigated the matter in this colony, as far as I have been able, by placing rain measures in cleared patches and in open plain country. One experiment showed that there was less rainfall in a clearing in the middle of a large scrub than upon the surrounding stations.

857. But experiments made in Australia have not been carried on for a sufficient length of time to make them of value? Of course their value is curtailed; but it is possible to make experiments with a bias, and I think that the way in which some of the experiments made in Europe have been conducted is open to question.

858. It is your opinion that any conservation of water and consequent increase of foliage will have no effect upon the climate? The existence of water, or of plants evaporating water into the atmosphere, simply saturates the air immediately above; but the whole atmosphere is shifting to the eastward at the rate of 300 or 400 miles a day. So that what water is evaporated at Bourke to-day is immediately over the coast to-morrow, and over the ocean next day.

James William Boulton, Esq., Superintendent of Public Watering Places and Artesian Water Supply, Department of Mines, sworn, and examined:—

859. *Mr. Fegan.*] Are you acquainted with the scheme before the Committee? No.

860. Are you acquainted with the country about the Darling? Yes; I know the Darling pretty well.

861. From Bourke to Brewarrina? I know it pretty well from Bourke to Walgett, and from Bourke to Wentworth.

862. Have you any bores near Bourke, or near Stony Point? We have a bore at Gidgea Camp, within 5 or 6 miles of Stony Point, another at Walkden's, and another at Pera. One of these is on the Barrington Road, another on the Hungerford Road, and a third on the Wanaaring Road.

863. Have you a bore at Walgett? Yes, the Euroka Bore.

864. What supply of water does it give? The Euroka Bore, which is the last put down, gives about 3,000,000 gallons a day, the Gidgea Camp Bore gives 7,000 gallons a day, Walkden's 200,000 gallons, and Pera 610,000 gallons a day.

865. What is the depth of these bores? Pera is about 1,100 feet, Gidgea Camp is about 2,050.

866. Have you noticed any decrease or increase in the supply? There has been a slight increase at Gidgea.

867. Have you noticed that after a good fall of rain the supply decreases or increases? The increase is due more to atmospheric pressure. The increase at Gidgea Camp came after we had carried out an experiment there with a water-lifter. I fancy we must have cleared out the interstices between the rock and the casing.

868. What strata did you go through? The usual cretaceous clay, then through the drifts, and then through about 700 feet of slate rock.

869. What is the water at that bore used for chiefly? Entirely for watering travelling stock. I think the tenant has a small garden, but it is not sufficiently large to do very much.

870. Have you noticed whether the water has improved the place or not? It has, of course, improved the place very much.

871. There is nothing in the water which is detrimental to vegetation? I think not. The carbonate of sodium, which is present in nearly all this water, varies very much in different bores. Some of them have so much of it that we should not attempt to use the water for any permanent irrigation.

872. Can you give us an analysis of the water from this bore? Yes; the chemical composition of the water in Walkden's bore is as follows:—

Chemical composition.	Grains per gallon.	In 1,000 parts.
Silica	1.330	0.0190
Sodium carb.	37.026	.5289
Potassium carb.	1.215	.0173
Calcium carb.	.999	.0142
Magnesium carb.	.254	.0036
Sodium chlor.	9.290	.1327
Alumina and ferric oxide	traces	traces
Total solid matter	56.113	.7157

873. What revenue do you get from Gidgea Camp Bore? £100 a year. It is under lease to a tenant.

874. What charge does he make for the water? He charges the regulation rates—10s. per 1,000 for sheep, 1d. a head for horses and bullocks, 4d. for camels, and ½d. for pigs.

875.

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875. What is the next bore? Walkden's, on the Hungerford Road. That bore is 1,604 feet deep, and gives a supply of 200,000 gallons a day. It is under the charge of a caretaker, and is situated 7 or 8 miles from Bourke, and 9 or 10-miles from Stony Point.
876. Has there been a decrease or an increase of the supply since the bore was put down? We have not noticed any variation.
877. Is any irrigation done with it? Only what the caretaker does for his garden.
878. What is the next bore? Pera Bore, on the Wanaaring Road. It is 7 miles from Bourke, and about 12 miles from Stony Point. The bore is 1,154 feet deep, and gives a supply of 615,000 gallons a day. It is at this bore that we have a settlement.
879. A homestead settlement? Yes.
880. Can you give us any information with reference to the irrigation that has been done there? Six hundred and forty acres of land were set apart.
881. What kind of land is it? Very good red soil; beautiful sandy loam.
882. What is the quality of the water? It is very good.
883. Similar to that coming from the other bores? I think it is better. The only two ingredients in the water from these bores, which are inimical to plant life, are carbonate of soda and chloride of sodium. Of the first there are present only 33.118 grains per gallon, and of the second, 7.690 grains per gallon. You must remember that there is no alkali in this soil. The waters obtained from the American bores show a smaller percentage of carbonate of sodium, but the soil there contains a large proportion of alkali.
884. What has been the result of irrigation at this settlement? We have eleven tenants there, each of whom holds a 20-acre block. They have all got the best part of their land cleared, and crops and vegetables planted, and are doing very well.
885. How long is it since the settlement was established? It was only started last July. Fifty-seven acres have been reserved as a farm for the Government.
886. What crops have they grown other than vegetables? Sorghum, maize, Kaffir corn, planter's friend, and broom millet, all of which are doing well. The sorghum has been placed in ensilage stacks, and is smelling as sweet as possible. I was there yesterday.
887. What are the terms under which the land is held? The people there pay an annual rent of £5 per block, and for that they get a supply of water equal to an annual rainfall of 35 inches.
888. How do they obtain the water? The water runs from a flume, and is delivered to them on their blocks in three places.
889. There are no pumps used? No.
890. Does the Government deliver the water at one corner of the block? We deliver it from the three places on the line of flume bordering the blocks. The people make their own connections with the flume.
891. What is the opinion of the people there about the settlement? They seem to be fairly well satisfied. They think they will make a "do" of it, as they call it.
892. They are satisfied that it is much better than to depend upon the rainfall? Yes.
893. You are satisfied that this small settlement will be a success? Yes; I think it will. I think they are working in the right direction.
894. What do they do with what they grow;—have they a market for their produce? They have not attempted anything of that sort yet. They supply their own horses, but that is all at the present time. They have a market in Bourke for any fodder that they can grow, and a market for vegetables in Byrock. With regard to the broom millet, there is a great opening for that. I had some of the millet sent to Sydney and made up into brooms, and I find that there is a profit of 9s. per dozen to be obtained. I reckon that that crop will give a return of from £15 to £20 an acre to the settlers. The people on the Manning told me that their return was somewhere about £15 per acre. There is a very large consumption of brooms in Bourke—from 500 to 900 dozen in the year—and there is a man here who will go up and manufacture them if the settlers will guarantee him 25 tons of stuff.
895. Are they attempting to grow any fruit there? Yes; but mostly fruit for drying, such as apricots, raisin grapes, Zante currants, prunes, and figs. The trees are making very good progress. It must be remembered that we started in the middle of one of the most extreme droughts that ever visited the colony, and when the heat was so great that it killed even men.
896. Do you think that these people will be able to make a living off 20 acres of land? Yes; in America they reckon that a man will make almost a competence out of 40 acres.
897. I suppose these people will be able, if they see their way clear, to take up blocks of 40 acres? No; I think the Act prevents them from doing that.
898. Are they employed at anything besides farming? Yes; they engage in carting, and take any odd work they can get.
899. What would have happened if there had been no water? Without water that country would not carry a sheep to 10 acres.
900. Cultivation would not have been possible? No; you might get some result from a bit of cultivation—perhaps once in seven years.
901. The land would be almost valueless without the water? Yes.
902. What is the next bore? The Euroka Bore. Its depth is 1,542 feet, and it gives a supply of 3,000,000 gallons in the twenty-four hours.
903. Is the water good? It is beautiful water; and I think that when it has been analysed it will perhaps be found to be better than any other artesian water. This bore is 14 miles from Walgett on the Coonamble Road, and 140 miles from Bourke.
904. Are you trying any irrigation there? We have not done anything yet, but it is proposed that something shall be done. We are running the surplus water through some settlers' land into the Castlereagh.
905. Has the water improved the land? Yes, and we may be able to make some permanent arrangement with the settlers. We have done so at another bore.
906. Your experience is that these bores have been of great assistance to settlement? Yes; there are only one or two bores, and they are situated near Wanaaring, where the proportion of soda is so great as to prevent irrigation being carried out. The water from these bores would make things grow for a time, but afterwards it would kill everything. It is, however, very good water for stock, though the supply is not very large.

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907. What position does the river stand in while the bores are giving this large supply of water? At the present time the river is below summer level.

908. Almost dry? There is a fair stream in it, but it is not much better than a ditch.

909. But these bores have given all the water necessary, and with careful use will make cultivation possible in these dry parts? Yes.

910. You think that although our experience may be very little, it should induce us to make further experiments with a view to getting water for irrigation? Yes; there is no question about that. We had a farm at the Native Dog Bore. It was carried on by the Department for a short time, and then leased as a going concern to the man who has it now. It is situated 4½ miles from Bourke, but the Department decided that it was too far from Bourke to be used for experimental purposes. There are 26 acres under cultivation there.

911. *Chairman.*] What rent is the Department getting for it? £90 2s. 6d., I think.

912. What did it cost? About £1,000.

913. *Mr. Humphery.*] How many acres of land are there attached to the bore? 640 acres.

914. *Mr. Fegan.*] For how long have you been getting 3,000,000 gallons a day from the Euroka Bore? Only a very short time. That bore was started in December last.

915. I suppose you cannot tell us if the water is inexhaustible? I think it is. All our experience points to the fact that this water is practically inexhaustible.

916. How much land could be irrigated by the water from this bore? From 1,200 to 1,400 acres, taking no account of the natural rainfall, which is about 14 inches in the year up there. The bore is situated on a beautiful black soil plain.

917. *Mr. Hassall.*] What is your experience with regard to the result of putting down these bores. Has land, otherwise of very little value, become occupied to any extent? There is no doubt that the bores have been of incalculable benefit to the country, and have greatly increased the value of the land. It naturally increases the carrying capacity of a run to have water running through it. Some of the drains that have been made carry the water from the bores 26 and 50 miles through the stations adjoining. To have such a drain through your land is better than to have a double frontage to a river, and in a lambing paddock I would sooner have one of these drains than any other kind of water-supply. The settlers themselves are thoroughly impressed with the value of this supply, and we have now applications from three distinct groups of settlers—two of them in the Gwydir district—offering to pay the Government 5 per cent. upon the cost of the bore, and 2 per cent. to form a sinking fund if the Government will put down the bore. The Minister has these propositions under consideration now. In one case about 73,000 acres are represented, and in another about 36,000 acres. The proposition which comes from Mercadool is being held over pending the settlement of the land case.

918. What is the greatest number of homestead leases served by an artesian bore? There are only two artesian bores that I know of upon homestead leases, the one is Mr. Rushton's, at Yantabulla, and the other is Mr. Barton's. At Moongulla Bore we have made an arrangement with four homestead selectors to deliver water at their boundary, while they take it to the different homesteads. They have cut about 60 miles of drains, and we give them two days a week clear run of the bore. They pay us £20 a year each.

919. I presume that they run the water into tanks? Yes, from tank to tank right through their holding.

920. What was the cost of the Moongulla Bore? I think nearly £5,000. Besides that, we have three 29-acre blocks and one 5-acre block on the section. Those people pay the same rental as is paid at Pera. Then a wool-scourer pays ¼d. per 1,000 gallons for all the water he uses, and I suppose he will use 700,000 gallons a day. We take the water after he has done with it and use it for irrigation purposes. We have a small farm there of 12 acres, upon which we are growing all sorts of things.

921. Does your revenue amount to a fair percentage upon your expenditure? No; but I think that it will.

922. Is there any chance of other homestead lessees being served? Yes; we could serve any on the other side of the road, though I think that that land all belongs to Moongulla Station. When it is thrown open for selection there will be a better chance. We started the same arrangement at Dungle, and have supplied two stations there with water.

923. That country, although good grazing land, is practically valueless in dry times? Yes, and the men of whom I have been speaking would have had to move their stock, if they could not get water at the time they did. The cost of the bore was £4,728 10s., the casing being extra, and bringing the total cost up to £6,838. The depth of the bore is 2,570 ft.

924. *Mr. Humphery.*] Does the total cost include the expense of maintenance up to date? No, that is, outside the total cost of putting down the bore. The bore is one of the most expensive in the colony.

925. *Mr. Hassall.*] What return do you get from that bore at the present time? I will furnish the information. With the information that we have now, we can follow certain lines and depend almost with certainty upon getting a large volume of artesian water at comparatively shallow depths.

926. These bores have opened up a large area of practically dry country which hitherto had not been available for close settlement? That is so.

927. The discovery of artesian water has practically overcome the difficulties of settlement there? Yes; these bores make close settlements possible where it was not possible before.

928. You think that when the Department has more experience, it will be able to develop this country so as to get a fair return for its expenditure? Yes; you cannot estimate the indirect effect of these bores. They have opened up the three roads that run to Bourke from Southern Queensland, and made it possible to travel stock upon them in any season. A few years ago I remember that Messrs. Rich & Co. had to send out teams with tanks to water stock with which they wished to take along special loading. It is only eighteen months ago that I had to drive 95 miles along the Wanaaring Road with only one drink for the buggy horses, and now on that length we have three flowing bores. The establishment of these bores ought to tend to draw the Southern Queensland trade to our metropolitan market.

929. The bores were put down, not so much to provide water for agricultural purposes, as to enable stock to exist in this part of the country, and to travel through it? That was the primary object of the bores, but where we have had a large supply of water we have extended our operations, and have shown people what can be grown there with water.

930. Do you think that irrigation along the Darling will ever be entered into to any great extent? You can see it done at some of the stations now in a small way.

J. W.  
Boulton,  
Esq.  
26 May, 1896.

931. Do you think that irrigation will ever be gone into on a large scale for the purpose of cultivating cereals and fodder for sale, and thus create any great traffic upon the river? I hardly think so. I think that if anything is done it will be in the direction of the intense culture of fruit—something easily portable that will bring a high return for the outlay.

932. Has cultivation been a failure at any of these bores? No. While the water has a rather large percentage of alkali, the soil has none at all, so that our soil and water combined are superior to the American soil and water combined. Analyses of the soil round the Pera and other bores where we have irrigated show that the quantity of alkali present is almost nil. The soil about Moree contains not a trace of alkali.

933. Which do you think would be better—to spend £150,000 in locking the Darling, or to spend the same sum in putting down artesian bores? That is a difficult question to answer. No doubt it is a great advantage to have a river open for traffic. I remember that years ago, when I lived on the Darling, from 1875 to 1879, our wool was stuck there for over two years. We could not get it away, because there was no river. Of late years the river has kept up better.

934. *Mr. Roberts.*] Can you tell the Committee what the various bores have cost? The following return will give you that information:—

1. Number of flowing wells (four in progress)	...	...	...	...	33
2. Number of pumping wells	...	...	...	...	13
3. Number of failures	...	...	...	...	4
4. Number in progress	...	...	...	...	12
5. Number let, but not commenced	...	...	...	...	23
					85
Less bores included twice	...	...	...	...	4
					81
Total...					
6. Total depth bored to date	...	...	...	84,809 ft. 6 in.	
7. Total cost of forty-five bores completed	...	...	...	£119,155 5s. 1d.	
8. Total depth of bores completed	...	...	...	69,614 ft.	
9. Average cost per foot of bores completed	...	...	...	£1 14s. 2d.	
10. Average depth of bores completed	...	...	...	1,513 ft. 4 in.	
11. Total cost of twenty-eight flowing wells	...	...	...	£74,377 9s. 5d.	
12. Total depth bored of flowing wells	...	...	...	40,008 ft.	
13. Average cost per foot of flowing wells	...	...	...	£1 17s.	
14. Average depth bored of flowing wells	...	...	...	1,428 ft. 10 in.	
15. Total cost of thirteen pumping wells	...	...	...	£35,832 19s. 1d.	
16. Total depth bored of pumping wells	...	...	...	18,407 ft. 3 in.	
17. Average cost per foot of pumping wells	...	...	...	£1 18s. 11d.	
18. Average depth of pumping wells	...	...	...	1,415 ft. 11 in.	
19. Estimated supply from thirty-three flowing wells	...	...	...	18,747,505 gallons per diem.	
20. Estimated supply from thirteen pumping wells	...	...	...	500,000 gallons per diem.	
21. Estimated supply from forty-six wells	...	...	...	19,247,505 gallons per diem.	

There are 105 private wells in the country, the output from which is about 38,000,000 gallons, while the output from the forty-six Government wells is 24,000,000 gallons. There are also twelve bores in progress at the present time.

935. What is the total income of the Department? About £5,000. The expenditure on tanks, wells, and bores throughout the colony has been nearly £500,000; but then there are a great number of tanks which do not pay a cent of rental. I will furnish a return showing the total expenditure on the bores.

936. *Chairman.*] What was the reason of the failures which you have had? We were right on the edge of the Cretaceous formation, and got down to bed-rock.

WEDNESDAY, 27 MAY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. CHARLES JAMES ROBERTS, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.

JOHN LIONEL PEGAN, Esq.

THOMAS HENRY HASSALL, Esq.

GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Tannatt William Edgeworth David, Esq., B.A., Professor of Geology, University of Sydney, sworn, and examined:—

T. W. E.  
David, Esq.,  
B.A.  
27 May, 1896.

937. *Chairman.*] Are you prepared to express an opinion with regard to the artesian water supply of this colony and of Queensland? Having been engaged on the geological survey of New South Wales for some years before I accepted my present position at the University, where I have been for five years, I have some knowledge of the artesian water-beds both of New South Wales and of Queensland. I have written out a short statement giving a rough calculation, which I have made for the information of the Committee, of the probable total amount of artesian water that may be drawn upon in New South Wales in the future.

938. Will you read it? It is as follows:—

The underground supplies of artesian water in New South Wales are entirely dependent on the rainfall, and the amount of water which could be drawn from the beds annually without tending to exhaust the supply would be about equal to the quantity which annually percolates into the artesian water-beds. Obviously, if the annual outflow is at all in excess of the annual inflow the tendency will be to exhaust the underground supply. If

If therefore the average annual inflow is known, it will be possible to calculate the average annual outflow. It is now known that there are two distinct sets of beds in New South Wales and Queensland, which yield artesian water.

T. W. E.  
David, Esq.,  
B.A.

The newer and upper set may be termed the Lower Cretaceous, and the lower and older the Triassic, or Trias-Jura. The supply of water to the artesian beds depends, therefore, (1) on the rain falling on the exposed edges of the porous beds belonging to these two sets of artesian formations; (2) on water of rivers flowing over the outcrops of these formations and leaking into the artesian beds.

27 May, 1896.

It is impossible to do more than approximate very roughly to the amount of water annually draining into these artesian beds.

If the length of outcrop of the Cretaceous porous-beds in New South Wales be 350 miles, and the width 5 miles, that is about similar to the width of the artesian-bearing Lower Cretaceous beds of Queensland, there would be a superficial area of about 1,750 square miles available as intake for water draining into the Cretaceous rock, and this amount might possibly be doubled if the intake area of the Triassic (Trias-Jura) series (in which latter the Coonamble and Moree bores are situated) be added. This would total 3,500 square miles. If the average rainfall over this area is 22 inches, and it be assumed that one-half of the rainfall percolates in this area, this would yield 1,500,000,000 (fifteen hundred million) gallons per day of water to the artesian beds. If to this be added 500,000,000 (five hundred million) gallons per day on account of water leaking in through rivers, the daily average inflow would amount to, roughly, about 2,000,000,000 (two thousand million) gallons per day.

It would probably not be possible to draw the whole of this quantity of water daily from the artesian wells of the present and future without lowering the hydraulic grade, and rendering some wells sub-artesian which are now artesian.

It might, however, perhaps be assumed provisionally that 1,500,000,000 gallons (fifteen hundred million) gallons daily is a very roughly approximate estimate in the present state of our knowledge of the total quantity of artesian water supply available.

If the present daily flow of the wells be 50,000,000 (fifty million) gallons, it should be possible to increase the yield perhaps by thirty times the present amount without seriously impairing or weakening the subterranean water supply.

The gist of my report is that it would be possible to increase our artesian wells thirty times without seriously impairing the supply of water.

939. *Mr. Hassall.*] Can you give us an idea of the extent of these artesian beds? I might preface my remarks by stating that the Government Geologist is in possession of later information upon the subject than I am, especially with regard to the Triassic beds, as he has lately been engaged in surveying the boundaries of these beds. These artesian water beds commence probably in the Gulf of Carpentaria, and skirt the western spurs of the mountains of Queensland, until they cross the boundary between Queensland and New South Wales, somewhere below Bonshaw, about 80 miles to the west of the northern railway line. The area tinted green on the map shows approximately the space which we know to be occupied partly by the Cretaceous artesian beds, and partly by the Triassic artesian beds. In view of recent discoveries, however, the boundary should be extended a good deal to the south-east, because when the map was drawn, it was supposed that only the Cretaceous beds were water-bearing. It is now known that the Triassic beds which are of the same age geologically as the Sydney sandstone, are also water-bearing.

940. *Chairman.*] May not further exploration extend the limits of this area? That is possible. Mr. Pittman is of opinion that the area needs to be extended towards Hay and Balranald.

941. *Mr. Hassall.*] Then that area would practically embrace the valley of the Darling? Not only the valley of the Darling, but also a considerable portion of the catchment area of its tributaries.

942. *Mr. Wright.*] And the Lachlan? I do not know that much of the Lachlan country would be included within the artesian basin.

943. *Mr. Hassall.*] What are the boundaries of the artesian area? Very roughly, the boundary would come down from the Queensland border to within a short distance to the east of Moree. Yetman would be within it. From Moree it would go towards Narrabri, thence to Gilgandra, on the Castlereagh, and thence to Narromine. Then, I think, the boundary is shown upon the map in fair accuracy as skirting round Nevertire, leaving a loop in Warren, near the centre of it, and then trending northwards to Brewarrina, and so on to Oxley's Table-land and Byrock. Thence west the district extends between the Queensland border and about 30½° S. latitude as far as Mount Brown.

944. *Mr. Wright.*] Does the boundary line come down as far as Cobar? I have never been to Cobar; but I know the character of the rocks near there, and they are not artesian rocks, nor likely to contain artesian water.

945. *Mr. Hassall.*] The discovery of artesian water in the belt of country between Moree and the Macintyre River, rather upset the then existing theory about artesian water? It very much added to our knowledge on the subject. It showed that there was a lower series of rocks which was also water-bearing.

946. Does that lower series extend beneath the Cretaceous formation? I think it will be found to extend under a large part of the Cretaceous area.

947. It will give us two sources of supply instead of one? Yes. You have one source of supply beneath another. It is like having a tank with a false bottom, and both compartments containing water.

948. Is the water-level of the Triassic series equal to that of the Cretaceous series? Possibly so. The intake is higher.

949. What is the source of supply of the Departmental bores which are near the coastal range;—would it be created by percolation? Yes, by the percolation of rain water and the leakage from rivers flowing over the porous formation.

950. You assume that the outlet of the Triassic formation is away to the westward, might it not be to the eastward? No. This porous formation could not double underneath the impervious rocks, which are far older than the water-bearing strata.

951. Then the artesian water must be confined to the western slope? Yes.

952. If the supply of water in the Cretaceous formation should ever give out through too many wells being sunk into it, would it be possible to put the same bores down deeper, and so strike water in the Triassic formation? I think that probably that could be done over a large area of the Cretaceous basin. But, since the newer series overlaps the older series one cannot definitely state that the older series would always be reached; though we know from bores that have been put down that the older series has a very large extent, and therefore, it is probable that the supply of water which it contains could be drawn upon by sinking anywhere over a very large part of the area of the Cretaceous formation.

953. I suppose that your knowledge of our rivers leads you to the conclusion that a large quantity of their water must escape into the artesian beds? Yes.

954. You have seen at the head of many of our rivers magnificent stretches of water running practically all the year round, while further west the river seems to dry up and disappear? Yes, I have noticed that.

- T. W. E. David, Esq., B.A.  
27 May, 1896.
955. The Macquarie and the Big River seem to become smaller and smaller as you get down? Yes.
956. You would naturally conclude that a great portion of the water of these rivers must sink into the underground reservoirs? Yes, the water is lost by percolation.
957. Have you any information to give us as to the distance between the two sets of water-bearing strata which you have referred to? We know that the Triassic strata are about 2,000 feet in thickness. I do not know that they have ever at any place been proved to be much thicker than 2,000 feet, and I should think that the outside limit of their thickness would be 3,000 feet. The Cretaceous strata vary very much in thickness. You might tap the water-bearing horizon at a depth of 150 feet, or you might have to sink 2,000 or 3,000 feet. If you wished to sink through the Cretaceous formation to the Triassic formation you might have to go another 2,000 feet before you obtained any supply, though you might not have to go more than 1,500 feet. By sinking 4,000 or 5,000 feet one ought to pass through both the Triassic and the Cretaceous formation.
958. The distance between the two sets of strata would vary very much;—the Cretaceous formation would be of an undulating character? Yes. If the clay-bed above were very thick, you might have to bore a considerable distance before you tapped the Cretaceous sandstone, and you might then have to go through 1,000 feet of clay before you came to the Triassic sandstone. You would always have to go from 1,500 to 2,000 feet, even under the most favourable circumstances, if you were on the Cretaceous rocks, and wished to tap the Triassic source of supply.
959. Does the Triassic formation undulate in the same way as the Cretaceous formation? The Triassic rocks lie, I think, in wide shallow basins, separated here and there by hillocks, or even by submerged ranges of impervious rock.
960. You think that we could, with perfect safety, put down thirty times as many artesian bores as we have at the present time? Yes.
961. So that if we had one hundred bores to-day, we could safely put down 3,000? Yes, provided they drew water in the same proportion as the present bores. Mr. Jack, the Government Geologist of Queensland, in a paper which he read last year to the Australasian Association for the Advancement of Science, very much extended his estimate of the artesian water available in Queensland, as compared with a former estimate. He originally estimated that the width of the strip of Cretaceous rocks was only one-eighth of a mile; but last year he told us that he had surveyed the strip and found that its width was about 5 miles. When he made his first report he thought that the amount of water then being taken from the Queensland artesian supply, namely, 100,000,000 gallons a day, was just about as much as drained into the basin, and that it would not be possible to increase the number of the wells without impairing the supply. After this survey, however, which substituted facts for theory, he was able to state that he thought it would be possible to increase the present outflow at least forty times.
962. *Mr. Roberts.*] In view of the quantity of artesian water to be obtained in our western districts, do you think it a matter of necessity to utilise the river Darling for irrigation purposes? I could hardly answer that question without taking the time to calculate how much water will be required to irrigate a certain area, and I should want some figures showing the area required to be irrigated.
963. *Chairman.*] It appears that to put 20 inches of water upon 610 acres of land, would require a supply of 347,830,400 gallons. You say that the supply of artesian water available is 2,000,000,000 gallons a day? I would sooner call it 1,500,000,000 gallons. A flow of 1,000,000 gallons a day would irrigate about 1 square mile, and therefore a flow of 1,500,000,000 gallons a day would irrigate 1,500 square miles.
964. A little over 1,000,000 acres? Yes. At the same time, I should like those figures to be taken only as approximate.
965. But, accepting the basis which appears to be laid down by the Department of Mines in their report upon artesian boring, it would appear that about 1,000,000 acres could be irrigated from our artesian water supply? I think so.
966. *Mr. Roberts.*] Could you estimate the cost of obtaining this supply? It could be estimated by ascertaining the cost of the total number of feet bored up to the present time, and multiplying it by thirty.
967. Is the water tapped by the artesian bores virtually a stream? It is virtually a stream in the form of an underground sheet. If it were an impounded basin the water would be highly mineralised and brackish.
968. Can the supply be looked upon as inexhaustible? If the present number of bores were increased to such an extent as to draw out about thirty times the amount of water now taken, probably as much would be taken out as was draining in, and then if any more were taken out the wells would cease to flow.
969. In regard to the scheme before the Committee, do you think it would be better to carry it out—remembering that for irrigation purposes it would be necessary to pump the water to a height of 35 feet—than to rely upon artesian boring. I should not like to express an opinion upon that subject.
970. *Mr. Humphery.*] Would it be possible to have a series of bores between Bourke and Brewarrina, within 3 miles of the river, which would provide an abundant supply of water for irrigation purposes? I am not quite sure as to what are the limits of safety, so far as the placing of one artesian bore near another is concerned. I do not think it would do to put two large bores within half a mile of each other.
971. The distance between Bourke and Brewarrina is about 60 miles by road, and 150 by river, and we have been told that the water of the Darling could be used for irrigation purposes within 3 miles of the river; can you tell us what artesian supply could be obtained within that area? You could get artesian water at intervals throughout that area.
972. But at about what interval? Without knowing exactly the depth of the bores there, I could hardly tell you.
973. Approximately? Well, the bores might be 5 miles from each other; but I should not like to make a definite statement without first entering into a calculation.
974. When you were estimating the available quantity of artesian water, did you take into consideration the probability of a number of bores being placed between the Darling and Milparinka? Yes.
975. Has that country been tapped? Yes; a good deal of water has been drawn from that district.
976. How many bores have been put down there? That I could not say; but a great many.
977. Have you any knowledge of that country? I have not been over that country myself.
978. Has artesian water been obtained as far out as Mount Browne? I am not prepared to say how near to Mount Browne artesian water has been obtained.
- 979.

979. Your estimate covers the whole supply to be obtained in the area you have already referred to? Yes; I think the map issued by the Department of Mines shows that there are some bores rather close to the Mount Browne district.
980. *Chairman.*] Do you know the character of the bed of the Darling? Only close to Bourke.
981. Would there be any percolation through it? Over considerable areas there would not be percolation, because of the hard clays which form the bed in places. The bed of the river is partly porous and partly impervious; but I could not give you any exact information unless an actual survey were made.
982. Is any such information available? If there is you could get it from Mr. Pittman.
983. Your statement with regard to the artesian water is briefly this: that if the water got away too readily there would be no head to raise it to the surface, while if it was obstructed altogether there would come a time when no more would be absorbed? Yes; the beds would become supersaturated, and the water would become brackish from the want of circulation.
984. But it is assumed that, with considerable difficulty, the water gets away somewhere—most likely to the south-east coast of Australia? Or to the Gulf of Carpentaria—most likely in both directions.
985. If a considerable quantity of water were taken from the water-bearing strata, would the tendency be for what is left to become highly mineralised? It would be likely to become less mineralised.
986. Therefore, there is reason to believe that, as we use the artesian water, it will get better, and not worse? Well, only to a limited extent; because, after all, the circulation would only be very slightly accelerated by the artesian bores.
987. But, no matter how we may draw from the artesian supply, the water is likely to remain good in quality? Yes.
988. Can you give us information with respect to the quality of the water already obtained? I would rather leave that to others. I have seen chemical analyses of the water; but I have not had an opportunity of judging as to its effect upon plant life. I believe that the Department of Agriculture has established a farm near one of these bores, and has tested the use of the water for irrigation—I have heard, with very satisfactory results.
989. Mineralised water might not affect the soil for one year, or even for half a dozen years; but subsequently it might destroy its value for agricultural purposes? That is so.
990. Can you tell us where such a difficulty as that has disclosed itself, and what means have been adopted to get rid of it? In the United States of America they have been troubled with an excess of alkali where they have been using artesian water for a great number of years. The trouble has been caused chiefly, I believe, by the presence of carbonate of soda in the water.
991. Carbonate of soda also occurs in our artesian water? I do not think that our artesian water contains so much of it as the American artesian water contains after it has been used for irrigation.
992. *Mr. Wright.*] Here the trouble is caused by chloride of sodium? No; there is only a small quantity of chloride of sodium. I think it is a negligible quantity.
993. If artesian water is continually being used upon soils largely charged with alkali, will not the supply itself become affected? I do not think so. The artesian wells in Algeria have been flowing for forty years.
994. A great deal of our western country is greatly charged with alkali; if you irrigate it, will not the alkali be taken down through the soil so as ultimately to destroy the supply? To get rid of the alkali trouble you would have ultimately to mix powdered gypsum into the water.
995. Would not the percolation take the alkali through the soil into the underground supply? No; it would never get back to the original source. Speaking generally of our artesian water and its mineral constituents, I might say that it compares very favourably with the artesian water in other parts of the world—for example, with the artesian water used in the north-west States of North America, and in Algeria.
996. Therefore, a comparison of the various soils for which it is required would enable us to find out what risk we run in using it? Yes. Mr. Guthrie, of the Department of Agriculture, could give you information in regard to character of the soil in the western district; and Mr. Mingaye, of the Department of Mines, has analysed the water.
997. *Mr. Black.*] You said something about this water returning to the ocean;—in artesian boring is water ever struck below the ocean level? Yes, very frequently. The bottoms of most of the bores in Queensland and in New South Wales are below the level of the sea. For instance, the surface level at Bourke is less than 400 feet above sea level, but the bores near there go down nearly 2,000 feet.
998. Does the pressure of water increase with the depth? The pressure does not increase in direct proportion to the depth. It depends upon the height of the intake and the frictional resistance.
999. If the diameter of a bore is increased very much, would that lessen the pressure? It will somewhat, but not to a very great extent.
1000. If you increased the diameter of a bore from 3 to 6 inches, or from 4 to 8 inches, would there be a decrease of pressure? I could not give you a reliable answer upon that point without knowing what the surrounding conditions were.
1001. Supposing the diameter of a bore were increased from 3 to 12 inches? Then, no doubt, the water would not come so fast; but a great deal would depend upon the porous nature of the ground. If the sand beds below were very porous, you might increase the diameter of the bore to 12 inches without affecting the pressure; but if, on the other hand, there is much resistance to the flow in the beds, a 3-inch bore would drain for a certain radius, and any larger bore would decrease the pressure.
1002. Possibly the longer a bore remains in use the less effective it is and it might in time come to be inoperative? I do not think that is likely. Actual experience of bores that have been running for forty years seems to show that as long as the pipes are kept clean the pressure is uniform.
1003. You were speaking of bores of a moderate size? Yes.
1004. But supposing a bore were as large as 3 feet in diameter? I do not think it would be wise to sink a bore of that diameter.
1005. The better way would be, where a large quantity of water was required, to sink several bores? Yes.
1006. What are the reasons why the water rises with such force in the artesian bores? It is simply due to hydraulic pressure. The pressure is no more than one would calculate it to be by taking the level of the inlet and the level at which the water is tapped, making allowance for frictional resistance. Very much depends upon the fineness of the sediment through which the water is flowing.

T. W. E.  
David, Esq.,  
B.A.

27 May, 1896.

James William Boulthbee, Esq., Superintendent of Public Watering Places and Artesian Water Supply, Department of Mines, sworn, and further examined:—

J. W.  
Boulthbee,  
Esq.  
27 May, 1896.

1007. *Mr. Roberts.*] Yesterday you were asked to furnish a return as to the cost of the artesian bores put down in this colony, and the revenue derived from them? Yes; that information is contained in the return which I now hand in. [*Vide Appendix*].

THURSDAY, 28 MAY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.	CHARLES ALFRED LEE, Esq.
The Hon. CHARLES JAMES ROBERTS, C.M.G.	JOHN LIONEL FEGAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	THOMAS HENRY HASSALL, Esq.
HENRY CLARKE, Esq.	GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

George Maiden, Esq., Manager, Messrs. Goldsbrough, Mort, & Co., Ltd., sworn, and examined:—

G. Maiden,  
Esq.  
28 May, 1896.

1008. *Chairman.*] Have you a knowledge of the country between Bourke and Brewarrina? Yes, extending over something like thirty years.

1009. *Mr. Roberts.*] Are you familiar with the scheme before the Committee? I have not made myself very much acquainted with it, but I have taken a cursory glance at it.

1010. When were you last in that part of the country which it will affect? Twenty years ago.

1011. You have not visited it since? No.

1012. Was the Darling a navigable stream when you knew it? Yes.

1013. Were steamers employed upon it? Yes.

1014. Where were they trading? Principally from the Lower Darling to Bourke, bringing goods from South Australia and from Echuca.

1015. In those days where did the Bourke wool go? Some of it to South Australia and some to Echuca.

1016. I suppose the position which you occupy causes you to keep this part of the country in your mind? We have large interests in the district.

1017. As a business man, do you see any need for the proposed work? I think that if carried out it would give a great boon to the people upon the Culgoa, Bokhara, and Narran, and would tend to draw a good deal of traffic down to feed the river at Bourke.

1018. Where does the produce from that district go to now? It comes down in drays, making the western line somewhere about Byrock. A good deal of it would go to Bourke.

1019. Does any of it go to Narrabri? Some of it would branch off to Narrabri; but I think that if the river were locked it would cease to go that way. It would of course depend upon the freight, however, though river charges are generally very light. Speaking generally, I think the scheme would be a good one for the district as a whole, and to the people upon the river more particularly. If part of the river is locked, as proposed, that will keep a permanent supply of water for a long way up, and would allow a more easy flow after light rains.

1020. And more produce would go to Bourke than goes there now? I think so.

1021. I suppose that it would also make a great saving of time in getting to market as far as the people to the north, out towards the Queensland border, are concerned? No doubt about it. At present, if a very wet season sets in out there, it is difficult to get anything along the roads.

1022. Is there a very large traffic between Brewarrina and Bourke? I do not think so. There is a fair amount of traffic; but not a great amount. The traffic would go to Byrock from Brewarrina.

1023. If the river were locked, the traffic would go to Bourke? No doubt about it.

1024. Would you favour the construction of a railway from Byrock to Brewarrina, in preference to the proposed work? I think it would be preferable to expend money in locking the river.

1025. Would you be favourable to the imposition of tolls upon the river? That is a matter which I have not considered.

1026. Have you in your possession any figures giving the amount of traffic to Bourke? I have not.

1027. You could not tell us how many bales of wool passed from Brewarrina to Bourke last year or the year before? No; but such information is available.

1028. Do you know the rate of carriage from Bourke to Brewarrina, or from Brewarrina to Byrock? I do not.

1028½. Would £2 be a fair thing? It would be somewhere about that. I could get you the information.

1029. You favour the locking of the river in order to make it navigable, so that produce could be carried by water at a lower rate—say, 10s. a ton? I should think that would be the effect. Water carriage is always cheaper than rail carriage.

1030. Do you think that 10s. a ton would be a fair rate for carriage from Brewarrina to Bourke by river? Yes.

1031. Do you look upon this work as one which must at some future time be extended as far as Walgett? I should hardly recommend its extension to Walgett, because I understand that the railway is going to Walgett.

1032. Will the locking of the river as far as Walgett make a railway to Walgett unnecessary? I do not think it would be wise to prevent a railway from going in the direction of Walgett? I think that the railway should be taken from Narrabri in the direction of Walgett, because such a line would pass through some of the finest country in Australia.

1033. Why would you recommend the construction of such a line in preference to the further locking of the river? The railway goes to Narrabri now, and not to extend it into the country to which I refer would be robbing one of the finest grazing districts in the colonies of its rights.

1034. If wool and other produce could be carried from Walgett by river at a cheap rate, do you think that it would be necessary to make a railway to Walgett? There are other considerations. There is a valuable

valuable district beyond Walgett which has a strong claim to a railway. I have no interest in this matter. I simply give you the result of conclusions at which I have arrived after eighteen to twenty years experience.

G. Maiden,  
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1035. *Chairman.*] You say that although you regard the locking of the river as an important work, having regard to its effect in so storing water, possibly up as far as Walgett, you do not look upon it as obviating the necessity of a railway extension from the north-western line to that place? Quite so.

1036. *Mr. Roberts.*] Even if it were decided to lock the Darling as far as Walgett, a railway to that place would still be necessary? Yes.

1037. Have you had any experience of irrigation in any part of the world? Not much.

1038. Have you ever been in California? No.

1039. Do you think that this scheme should be favourably viewed from what I may term the irrigation point of view? I have no doubt that it will be of immense advantage in that direction as time goes on.

1040. But you have not given the subject of irrigation much consideration? Not very much. I have only considered it in a general way.

1041. Have you seen any of the artesian bores which have been put down in this Colony? No; but there are two or three such bores on some of our securities, and the reports I get speak very favourably of them.

1042. *Mr. Wright.*] You have had a large experience of wool-raising as well as of wool-selling? Yes.

1043. Do you think a man could pay 5s. an acre for water to irrigate land upon which he wished to graze sheep? I do not.

1044. If it has been stated in evidence that sheep-farmers would pay 5s. an acre for water for that purpose, and pump it themselves, do you think that that statement is correct? I do not think that they would pay that price for water, considering the present condition of the country and of the wool market.

1045. Do you think it would pay a sheep farmer to have his land flooded for 6d. or 1s. an acre, he cutting his own trenches and pumping the water? It might pay to irrigate patches; but it would not pay to irrigate generally.

1046. Do you think that irrigation will take place on a large scale in connection with grazing land? I do not think so.

1047. Do you think that a man who had a good river flat would be likely to cultivate 300 or 500 acres of lucerne for winter feed for his stock if he could irrigate his land? There might be exceptions; but I do not think it would be generally done.

1048. You are aware that Mr. Wills Allen has cultivated some hundreds of acres in this way? Yes.

1049. Do you think that the same thing will be done along the Darling if water is conserved there? The conditions of soil upon the Darling are quite different.

1050. Experience shows us that very large crops can be obtained from that district when the land is irrigated? But you must not forget that the climatic conditions on the Darling are different from those which prevail where Mr. Wills Allen has his estate. You get a rainfall at the latter place which you do not get on the Darling.

1051. But, if you have water artificially conserved, it does not matter whether you get rain or not? I think that the water which falls upon the land in the shape of rain is better for it than any other.

1052. Small patches of land which have been irrigated by artesian bores in this district have produced phenomenal crops of lucerne, vegetables, and so on? Yes; but you must take into consideration the expense. What is being done now is done under the most favourable conditions, because the land irrigated is close to the source of supply. If that land were 10 miles off, the question of expense would arise.

1053. Do you think that a squatter having 500 acres of very rich land on the banks on the Darling would be likely to pay 5s. per acre for water in order that he might grow lucerne upon the land, he having to pump the water himself? Not as a rule.

1054. Do you think that it would pay a man to do that? I do not think it would.

1055. You say that the wool from the Narran and the Bokhara now comes in to Bourke, and that if the river were locked that traffic would be increased, and the people there would have cheaper carriage? I did not say that the locking of the river would increase the traffic. I said that the work would be a great boon to the people out there, and should give them cheaper carriage.

1056. What do you think of the construction of a railway from Byrock to Brewarrina? I said that I thought it would be better to spend the money in the way now proposed.

1057. Because the locking of the river would serve two purposes—it would conserve water, and would provide a highway? Yes.

1058. Do not the exceptionally low rates charged upon the Bourke line tend to divert traffic to Bourke which would otherwise go to Narrabri? To a certain extent they do.

1059. But you do not think that the north-west country will be properly served by being provided with water carriage to Bourke and railway carriage from Bourke to Sydney? How could the territory between Narrabri and Walgett be served in that way.

1060. If the river were properly locked it might be made navigable as far as Collarendabri? Even then you would want a railway. I look upon that district as having the finest class of settlers there is in the colony.

1061. You approve of the locking of the Darling because it will effect the conservation of a large quantity of water, because it will create a highway for traffic, and because it will provide means for irrigation? Principally because it will make the river navigable, and will conserve a large quantity of water.

1062. You do not attach so much importance to the question of irrigation? To my mind, that is a secondary matter at the present time.

1063. *Mr. Black.*] Have you given the question of irrigation any study? Not much.

1064. If the settlers along the banks of the river used the water of the river to irrigate their land, do you think they would have a local market for their surplus produce? Not with the present population.

1065. Do you think they could compete in the metropolitan markets with produce grown on naturally-watered land, and on which the cost of long railway carriage had not to be paid? Certainly not.

1066. You are not inclined to think that this scheme is commendable because it would bring about the conversion of large areas of land from pastoral to agricultural occupation? To my mind, that is a minor consideration.

1067. It must be a minor consideration, and cannot be an immediate consideration? And cannot be an immediate consideration.

1068.

- G. Maiden,  
Esq.  
28 May, 1896.
1068. *Mr. Humphery.*] Is there any loss of wool to the railway by reason of the higher rates charged between Narrabri and Sydney, comparing those rates with the rates between Bourke and Sydney? No; there is a gain of wool, because the Bourke rates draw the Queensland wool. That is their object.
1069. It is a matter of policy, and the lower rates augment rather than diminish the earnings of the railway? Yes, because they draw Queensland wool, which would otherwise not come this way. The differential rate charged on the Bourke railway is so charged in order to get the Queensland wool. It is not necessary to make a differential rate on the Narrabri line, because the Queensland railways take the wool from that part of Queensland to the north of Narrabri. If the rate from Narrabri were proportionately equal to the rate from Bourke, some of the Queensland wool would be drawn to Narrabri; but it would not be drawn to Narrabri to the same extent as Queensland wool is drawn to Bourke, and the quantity of it would not be sufficiently large to make it worth while for the Commissioners to lower the rate.
1070. You rather favour the construction of a railway from Narrabri to Collareendabri;—have you considered the proposal to extend the line from Nevertire through Warren to Coonamble, and thence to Walgett? I have not considered it; but I know the country through which such a line would pass.
1071. Of the two proposals, which would you favour? Both districts have large claims.
1072. If the railway were taken to Walgett you would not want a railway to Collareendabri? To my mind you would. There are two districts having distinct and separate claims.
1073. If the railway were extended from Narrabri to Collareendabri, would you want a line from Nevertire to Walgett? Yes.
1074. Would not the lines compete with each other? No.
1075. Could not Walgett be used for a terminal dépôt as well as Collareendabri? No. There is a very large district between Nevertire and Walgett which should be served by a railway, and another large district between Narrabri and Collareendabri, which should also be served by a railway. The latter line would also tap a large extent of back country not drained by the first line. There would not be the necessity to take the line from Coonamble to Walgett if the river were made navigable.
1076. You do not think it would be necessary to extend the railway beyond Coonamble? It would not be necessary, though it would be a great convenience to the district.
1077. In your opinion would it be politic to proceed beyond Coonamble? I do not think it would.
1078. You think that sufficient railway facilities would be afforded to these districts, if a line were taken from Nevertire to Coonamble, and another line from Narrabri to Collareendabri? Yes; between Coonamble and Walgett the country would be very difficult for railway construction, because it is often flooded for miles back. I have ridden through it, 4 miles out from the river, when the water has been up to my horse's back.
1079. *Mr. Trickett.*] I understand that your chief reason for supporting this scheme is that it would improve the navigation of the river, and give facilities for the carriage of goods? Yes.
1080. The official who speaks for the Government gave this evidence in putting the scheme before us: "Looking at the scheme merely as one for opening up the river for navigation, I do not think the expenditure would be justifiable." Do you agree with that opinion? Not only would you improve the navigation of the river, but you would store an immense quantity of water, which I think is a necessary thing to do. I went down the Darling once when it was almost dry for a stretch of a couple of hundred miles, except where there were holes.
1081. You think this scheme would be carried out regardless of any revenue that it may produce? I think it should be preferred to the alternative railway proposal, which, I understand, will cost £140,000.
1082. Have you seen Mr. Wills Allen's property? I only know of it.
1083. Do you know if irrigation has proved a successful venture there? I heard it spoken of as fairly successful.
1084. We have had it stated in evidence that his property, which consists of 40,000 acres, has been materially benefited by the irrigation of 500 acres; how could that result come about? You might get 500 acres of land which would be suitable for irrigation; but at the same time you might not get 40.
1085. I understand from an answer which you gave to Mr. Black, that you did not think that irrigation would be much used on large areas? No; it would not pay.
1086. People will not give 5s. an acre a year for the privilege of using water? I do not think so.
1087. *Mr. Lee.*] When you were speaking about the necessity of constructing a railway from Narrabri to Collareendabri, had you in view the line now being constructed to Moree? I had.
1088. Do you not think that line will meet the requirements of the district to which you referred? In a measure, but not wholly. That line runs just on the edge of the good country.
1089. But it is bound to serve a large part of that country because it will bring it within 20 miles of railway communication? It will serve it in the same way as the railway from Narrabri serves it.
1090. Do you not think that if there is to be any quantity of Queensland wool diverted to this colony it will come to our line by way of Moree? Wool grown to the north of Bourke is not likely to come to Moree. Our company is interested in wool grown upon the Warrego. That wool would certainly never go to Moree. All the stations up there will come to Bourke.
1091. But what about the St. George country? The wool from there would go to Narrabri.
1092. Is your firm in the habit of receiving wool from that country by way of South Australia or Victoria? No.
1093. You do not receive consignments which have been sent down the river to South Australia, and thence on to Sydney by steamer? No.
1094. Does the wool go to Victoria? Some of it does.
1095. Is that wool coming from the north of Bourke? It would come from the north-west of Bourke.
1096. Would it be influenced in this direction if the Upper Darling were kept permanently navigable? Only the wool from the borders of that territory.
1097. That wool is outside the district which will be affected by the locking of the Darling? To a very large extent it is.
1098. We must not look to that part of the country for a large additional traffic? No.
1099. I suppose there was a very small settlement in the country between Bourke and Brewarrina when you knew it? There was none.
1100. There is not very much now? There are a few homestead lessees.
1101. That land is used principally for grazing purposes? Yes.

1102. Are you of opinion that if there was a permanent supply of water in the Darling between Bourke and Brewarrina, closer settlement would ensue upon the banks of the river? I do not think it would alter things materially.

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1103. Is that country capable of producing fruits of various kinds? I think it would produce anything on the face of the earth.

1104. Do you think that with an abundant supply of water for irrigation, there would be closer and more profitable settlement? I do not think so. The towns there are very small, so that there would be no great local demand for anything produced, and the distance would prevent anything from being sent to the metropolis.

1105. Without water that country is valueless. What would it be capable of if were irrigated? It would be very productive.

1106. Is it capable of growing the vine? Yes; I have seen splendid grapes grown there.

1107. Would it grow stone fruits? Yes.

1108. Do you think they would grow there as well as at Mildura? I think so.

1109. Is there any reason why they should not? None at all.

1110. With an abundant supply of water there would be no limit to the possibilities of that country? Quite so.

1111. But you are concerned more with the question of traffic? Yes.

1112. Is it your opinion that notwithstanding what may be our future railway policy, it would be a wise thing to lock the Upper Darling? I think it would.

1113. *Mr. Clarke.*] What are the principal reasons why you approve of this scheme? Because of the convenience which it would prove to the producers of the district in contrast to the alternative proposal of a railway from Byrock to Brewarrina; secondly, because of the amount of water which would be conserved. If 150 miles of water were permanently conserved, and light rains fell in the New England district, the river would flow very easily, and the water would be carried all the way down.

1114. I suppose that cattle and sheep rearing is the principal industry of the district? Wool is the chief product.

1115. If the river were locked between Bourke and Brewarrina, would it pay to carry live stock along it in steamers? No, and I do not think any necessity for that would arise.

1116. You think that in ordinary seasons it would be cheaper to drive the cattle? The only time when there would be any need to convey live stock by steamer would be when the whole country was flooded, and at such times you would have great difficulty in getting into Brewarrina.

1117. Do you think it would be possible to grow cereals in the district? Yes.

1118. Would there be a local market? I do not think so.

1119. Would it not cost too much to send locally grown produce, and particularly wheat and oats, to Sydney, and other places along the railway line? I think that if there were any profit to be obtained in growing these things in the district they would be grown now at Bourke. Seeing that nothing is done now, I do not know that any difference would be seen if the population were thicker.

1120. It would not pay to irrigate large areas for pastoral purposes? No.

1121. Do you not think that it would be very expensive to pump water from the Darling for irrigation purposes? Yes.

1122. Do you think it would prove a financial success? I do not.

1123. Do you think it would be cheaper to irrigate from artesian wells? It would be cheaper.

1124. If the river were locked right down to Wentworth, would not that take away a large amount of trade from New South Wales and give an advantage to South Australia? No doubt it would.

1125. Although such an arrangement might benefit the people near the river, it would injure the trade of the colony? I should not recommend the locking of the Darling below Bourke, until after the colonies have federated.

1126. Do you think that a railway from Brewarrina to Byrock would be of as much advantage as the construction of the proposed scheme? I think that the carrying out of the proposed scheme would be better for the district, and for the public generally.

1127. But would it not impose an extra charge upon the people of Brewarrina to compel them to send their produce along the river to Bourke, and then bring it back by rail to Byrock, instead of taking it direct by rail? The water carriage would be infinitely cheaper than rail carriage, and under the present differential system of railway rates, the charge from Bourke to Sydney would be the same as from Byrock to Sydney.

1128. *Mr. Fegan.*] I understand that the population in this district is now very sparse;—do you think that if facilities are given for navigation and for irrigation it will become much more thickly populated? No doubt the tendency will be for the population to increase.

1129. And the Government would recoup itself for what it expended upon this scheme by the extra value of the land there? That would depend upon the results obtained from irrigation. If irrigation there turned out as badly as it has done at Mildura, there would be no great danger.

1130. Was not the failure of Mildura caused to a great extent by the quarrels between the various parties interested in the place? Yes, to some extent; but in any case the results have not been satisfactory to those who have embarked in the enterprise.

1131. Seeing that in America and in India irrigation has been carried on with great success, do you not think it would be made successful upon the banks of the Darling? In India labour is much cheaper than it is here, while in America they seem to know more about the fruit-growing business than we know, and are more energetic.

1132. Then it is not altogether the system that has failed at Mildura? Well, the success of irrigation depends altogether upon its cost.

1133. Wages are pretty high in America, are they not? Yes; I think they are higher in Australia than in America.

1134. Therefore, with able men at the head of affairs, irrigation should be carried on as successfully on the Darling as at any other place? Yes. I believe it ought to be where the conditions are suitable.

1135. Would not successful irrigation increase the value of land on the Darling? In a measure.

1136. And would not this increase in value materially help to pay for the cost of carrying out the scheme before us? It should do so.

1137. You think the scheme is worth a trial? I do.

1138.

- G. Maiden, Esq.  
28 May, 1896.
1138. *Mr. Hassall.*] If this scheme were carried out, would not Brewarrina become the natural depôt for the traffic from the Bokhara, Narran, Birrie, and Culgoa Rivers? Yes.
1139. Is not the district watered by those rivers the great wool-producing district in that part of the colony? Yes.
1140. That district extends for a considerable distance into Queensland? Yes.
1141. If the river were made navigable, do you think that more wool would be attracted from that district;—do you think that wool would drift in from the Warrego? That all depends upon how far the scheme will suit the people lying back from Brewarrina.
1142. Do you think that the proposed expenditure is justifiable in view of this large expanse of wool-growing country that it would serve? I do.
1143. You think that it would be better to carry out the proposed scheme than to expend, perhaps, a larger amount of money in making a railway from Byrock to Brewarrina? Yes.
1144. You think the country would be better served by the locking of the river? All those places out back would be better served by the proposed scheme, and in locking the river you would be commencing a national work.
1145. If the river were locked between Bourko and Brewarrina, would the effect be to fill up the upper reaches when light rains fell in the New England district? Yes.
1146. And during flood-time the water would be thrown back into the ana-branches, and thus reach a large extent of back country? Yes.
1147. There are a great many ana-branches which would be filled in this way? Yes.
1148. You do not think that agriculture will be entered upon to a large extent on the banks of the Darling? I do not think so.
1149. You think that people will only cultivate a few specially suitable patches as they do now? Yes; for their own immediate use.
1150. Perhaps they will do as Mr. Walls Allen has done—cultivate a few hundred acres to provide food as a stand-by for bad seasons? Exactly.
1151. There will be no general irrigation entered upon? I have not the slightest doubt that there will be no general cultivation along the river between Bourke and Brewarrina. I do not think that the present holders will be swept away, and that the land will be used for growing vegetables and cereals.
1152. Agriculture will not be entered into upon such a scale as to provide additional river traffic? I do not think so.
1153. But it is advisable to commence locking these reaches of the river? Yes; I think it is worth a trial.
1154. With a view to extending operations later on? Yes.
1155. Are you aware that a steamer has been up as far as Mogil? Yes; but to improve the river for navigation as far as that place would require the expenditure of a great deal of money upon snagging.
1156. When the rains are heavy, and the flood-waters are out, it is practically impossible to travel on wheels throughout that country, but if the river were permanently navigable people could use it for sending their produce away, and bring supplies back? Yes.
1157. Therefore, as an alternative to a railway, it might be advisable to incur expenditure upon this scheme? Yes. I favour the locking of the river, primarily because I think that it will be a good national undertaking, but more particularly because I think it is preferable to the alternative railway proposal.
1158. You are aware that the carrying capacity of that district is being materially increased by the boring for artesian water which has taken place? Yes.
1159. Do you not think that this will largely increase the output of wool in the course of time? No doubt it will.
1160. And this scheme will be beneficial in providing means of conveyance at present lacking? Quite so.

James William Boultsbee, Esq., Superintendent of Public Watering Places and Artesian Water Supply, Department of Mines, sworn, and further examined:—

- J. W. Boultsbee, Esq.  
28 May, 1896.
1161. *Mr. Roberts.*] When the Committee adjourned yesterday afternoon you were about to read some extracts showing the progress of irrigation in America? Yes; I have here some extracts from a report by Colonel Richard Hinton, which was published in 1892. Colonel Hinton was an expert, appointed by the Washington Government, to inquire thoroughly into the question of artesian wells and underflow. He went into the subject most exhaustively, and I think you will find that the extracts which I have named are pertinent to your inquiry:—

Artesian water is used more extensively for irrigation purposes in California than in any State in the Union, as at the end of the year 1891 it was estimated that out of 100,000 acres irrigated from artesian wells west of the 97th meridian 50,000 acres were in California. Irrigation with artesian water for raising all sorts of fruit, lucerne, vegetables, and, to a small extent, of grain, has been practised for years, and can be looked on as a permanent success. This water, however, is generally too valuable to be used for the cultivation of grain, and is mostly devoted to the intense cultivation now so largely carried on in fruit-growing districts.

Engineer W. Hall, in his report on Perris Irrigation District, dated August, 1891, states:—

Between 1880 and 1884 the canal of the Riverside Colony was a line of demarcation between land worth no more in the market than £2 per acre, and other readily saleable at £50. Those above the canal were without irrigation, and there was but a vague hope of ever securing it. But the building of the Upper Riverside or Gage Canal (source from artesian wells), in 1885–86, made water-rights available for these upper lands; they paid a big bonus for the water privilege, and are now selling at £40 to £100 per acre, without improvements.

Professor R. T. Hill, in his report on the occurrence of artesian and underground water in Texas, Eastern New Mexico and Indian Territory, west of the 97th meridian, published in 1892 by the U.S. Agricultural Department, says of the artesian waters of the Black and Grand Prairies, the greatest artesian belt of Texas:—

In no portion of the country has there been a grander development of artesian wells than in the past five years in the Grand and Black Prairie regions of Texas. At numerous places throughout its extent magnificent flows of water have been secured, and what ten years ago was in many places a poorly watered district now abounds in magnificent artesian wells, which supply water to cities and farms in quantity large enough to make many new industries possible, besides furnishing water to irrigate many thousands of acres. The wells vary in depth from 50 to nearly 2,000 feet, with every intervening depth. They also vary in volume, or flow, from less than a gallon a minute to a thousand, and in pressure from nothing to maximum. The purity of this artesian supply for domestic purposes and its healthfulness gave Fort Worth

an enviable superiority which her rival cities were not slow to imitate, and as a result of her success nearly every city and village in the Grand and Black Prairie region, and in fact throughout the State, made artesian experiments. A few of these were put down in unfavourable locations and were failures, but hundreds more were successful, and to-day most of the cities of the State, which, before this artesian epoch, were without good water are supplied with an abundance. The industrial uses to which these waters are at present put are many. At Waco, hundreds of sewing-machines in clothing factories, electric motors, wood-working machinery, and other small industries are run by the pressure of wells, without wasting the water by the use of small and powerful California wheels. When the high cost of fuel in Texas is considered, this use of artesian water becomes a most important factor. The greatest use of this water at present is the fact that it brings the hitherto poorly-watered farming and grazing lands an abundant supply of water for domestic and stock purposes, making small farms of 100 acres or less possible where until recently subdivisions of large bodies of land or ranches were impossible. The value of these wells for irrigation has been demonstrated by the modest farmers of Paluxy Valley, who, by their own humble methods and without previous knowledge of the subject, are now quadrupling the yield of cotton and grain. A farmer at Paluxy stated to me that his 10 acres of cotton yielding nearly two bales of 500 pounds each to the acre, was far more profitable and easily worked than 100 acres which he had until recently cultivated in Alabama.

Irrigation from the artesian wells is at present successfully practised in the Paluxy region, and the largest and most prosperous city in Texas, San Antonio, is built upon and about an irrigation enterprise which has most profitably and successfully utilised the underground waters for nearly 300 years, affording occupation for all the mission settlements in the past, supporting hundreds of gardens at the present, and destined to be of great value in the future.

Every drop of water from these springs and wells can be utilised for irrigation, and when the people of the region appreciate the fact that each gallon of water has a specific value in agriculture, as has a pound of coal in industrial enterprise, not one drop of this water will be allowed to escape unutilised, and the agricultural wealth will be enormously increased.

From the information furnished by Colonel Hinton's report (page 129) I gather that the celebrated fruit ranch of Riverside, in San Bernardino County, California, derives a portion of its water supply from artesian wells. There are 12,000 acres under fruit at this ranch served by twenty-seven artesian wells which are known as the Gage system, yielding a flow of 11,000,000 gallons per diem. These wells are grouped at distances varying from 10 to 700 feet apart within an area of 700 acres. The water is flumed down to the land to be irrigated. The success of this system has encouraged others, and there is now in progress an undertaking of a similar nature known as the Whittier system, located in the Upper San Gabriel Valley, comprising fourteen wells (*vide* page 126). The works, which are not yet completed, consist of 11 miles of cement channel, and 6,200 feet of fluming on piles and trestles. In the San Louis Valley there are 3,700 flowing wells within an area of 8,000 square miles; the Alamosa town well, in the same valley, is described as the principal source of supply for the 30 miles of irrigating ditches within the corporate limits of Alamosa (*vide* page 153). In Utah, the artesian wells in the Salt Lake Valley were first used for irrigation about seven years ago, since when the area of cultivation has increased from 25 to 35 per cent. In Kern County, California, is a remarkable group of fifty-four wells within an area of 252 square miles, which yield the enormous daily supply of 61,000,000 gallons; and it is interesting to compare the extent of our artesian water-bearing formation, estimated at some 60,000 square miles, with no more perhaps than 150 artesian wells upon it, with the figures relating to the San Louis Valley and Kern Valley above quoted. In Texas there are more than 1,000 flowing wells, and it is stated regarding them in the report quoted that "their vast capability and adaptability for making secure agriculture, always rendered uncertain in high temperature, even when the rainfall, if properly distributed, is ample for industrial use, has just become a matter of general understanding." To go nearer home, in Hawaii, on the margin of Pearl Harbour, 20,000 acres of rice, and large areas of bananas, are under irrigation from artesian wells, in addition to which power is provided for several large mills (*vide* page 426). The immense strides made in Algeria are perhaps too well known to refer to. Page 16 of the same report puts the number of artesian wells west of the 97th meridian in America at 13,695. The subdivision of the land at Pera, in small areas, is following out the principle adopted in America by most of the large irrigation companies. Colonel Hinton states in his report on page 19:—

A land sale that took place quite recently in San Bernardino Co. illustrates the progress of the small farm. At this sale, conducted by a company which has constructed irrigation works in a field heretofore regarded as unpromising, over 8,000 acres of land were disposed of at an average rate of \$66.34 per acre. Of this land, 2,600 acres were disposed of in 10-acre blocks; nearly 1,400 acres were sold in 20-acre parcels; a few other sales were made at 40, 50, 60, 70, and 80 acre divisions.

On page 28 he states:—

Without artificial conservation and distribution of water, Riverside, like other prosperous settlements of San Bernardino Co., would have no real value for farm purposes. It would have taken 800 acres of its area to support a ranche man or hunter, and 25 to poorly feed one broad-horned steer. About 6,000 people now live in the greatest of comfort, even luxuriously, on 6,000 acres of land.

On page 32 he states:—

The most successful utilisation and reclamation for irrigable areas within our public domain has grown out of the establishment of colony and co-operative life in some modified form. It was quite certain, then, that more rapid progress in reclamation will be secured through a system of land laws which will subdivide the irrigable areas by homestead divisions of from 20 up to 160 acres, according to location and adaptation to fruit, vegetables, cereals, and forage plants.

In connection with the Algerian wells, I might perhaps mention that artesian-boring was first started by the French military authorities in that country for strategical purposes. The first well put down had a flow of about 1,200,000 gallons. The French Government afterwards gave the Biskraa and Oued Rirh Company a very large area of land upon which that company put down artesian bores, and at the present time they are irrigating about 4,000 acres of palm-groves entirely from this supply. The quality of water obtained is, however, very inferior to the water obtained in New South Wales, and some of it is hardly potable as far as human beings are concerned. Biskraa is becoming a regular health resort for English people. It is, I think, within four days' journey of London. I was also asked yesterday what was the total daily flow from our artesian bores. The present supply is from the forty-six Government wells, 24,000,000 gallons; from four wells which are flowing, but which are not completed, about 1,000,000 gallons; and from the 105 private wells, 38,000,000 gallons; or a total of about 63,000,000 gallons per day.

1162. Irrigation seems to have been a very great success in America;—do you know any reason why it should not be a similar success in this country? No; the only disability we should be under is our want of population, but I think that will come.

1163. How many landowners contribute the £1,292 which is the total revenue derived by the Government for the artesian water which they supply? There are eleven people at Pera who pay for water, four at Moongulla, and seventeen tenants of other bores.

1164. Do all the people to whom artesian water could be conveyed take advantage of it? No; I do not think it is generally known amongst them that the water is available.

1165.

J. W.  
Boulbee,  
Esq.  
28 May, 1896.

- J. W. Boutbee, Esq.  
28 May, 1896.
1165. Does not the Department make it known through the Press that water is available at certain points? The works are periodically advertised.
1166. Have you been over the country between Bourke and Brewarrina? Yes, on this side of the river; but not on the other side.
1167. Would you like to express an opinion upon the proposal before the Committee? No; I could not do so. I know that it is all good rich country there, and I have heard that the owner of Beemery Station has put in 100 acres of wheat this year.
1168. Do you know Mr. Wills Allen's estate near Gunnedah? No; I have not been there.
1169. You think that the reason why the artesian water has not been more generally used is that people do not know that it is available? Yes, and have no knowledge of how to apply it. Agriculture in that part of the country has hitherto been almost unknown. The people have confined their efforts to the growing of a little hay for the station horses and to the cultivation of a few gardens.
1170. Do you think that the price charged for water by the Department—5s. an acre—is considered too much? I have not heard any complaints about the charge.
1171. What do the Chaffey's charge for water? I could not tell you; but I understand that the cost of pumping, cultivation, and everything came to about £6 an acre.
1172. Do you think that if the water of the Darling were conserved a large amount of settlement would take place there? I think so eventually, but I think it will take a few years before there is much settlement there.
1173. Do you think the people living within 3 miles of the Darling would be willing to pay pumping licenses to enable them to use the water? The station people might, but I think it would be a matter of years before the small holders would do so.
1174. You do not think they would go in for agriculture even if water were plentiful? I think they would in a few years' time, when the benefits of irrigation became fully recognised.
1175. Then do you look upon this scheme as premature? No; I do not think that any work of this kind can be premature. We must get the people educated up to the advantages which it will give. It was a long time before they got the American people to take hold of the advantages of irrigation, but now it is going forward with a tremendous rush.
1176. How long is it since irrigation was successfully adopted in America? Within the last twenty or thirty years.
1177. Most of the irrigation there is done by gravitation. Almost entirely.
1178. In every case, is a charge made for the use of the water? Yes. Most of the work is done by private enterprise—speculative companies acquiring a right to the land to be irrigated and making the necessary works. The land is then sold in parcels with a water-right pertaining to it.
1179. Is it a fact that in California land which was purchased for £1 an acre has sold for £30 an acre? Yes, and land that has been purchased for £2 an acre has sold for £50 an acre. Orchards in full bearing have been sold for as much as £100 and £150 an acre.
1180. What would be the original upset price of the land—£1 an acre? I think less than that. I think that in the unsettled portions of the States you can get land for about 5s. 6d. an acre.
1181. What are the principal fruits grown in California? Twenty years ago the growing of the raisin grape was entered upon at Fresno, and that place now supports a large population entirely devoted to that industry. A great many oranges and other citrus fruits are also grown there. The number of citrus trees in California is something over 4,000,000. The people also grow lucerne to a very large extent, while peaches, plums, and fruits of that kind grow to perfection.
1182. Is not the soil in the western parts of New South Wales as fertile as the Californian soil? I should think it would be better soil. I have always supposed it to be a long way ahead of the Californian soil.
1183. And equally suitable for the growth of the fruits you mention? I think so. A great portion of the soil that we are irrigating at Pera has the same nodular limestone sub-soil as that which gives its peculiar properties to the soil in the Bordeaux district. Such soil is admirably suited for the growing of grapes of all descriptions. I look forward to seeing the growth of raisin grapes become a very valuable industry at Pera. There would be a very good local market in the district, and I think that Messrs. Rich & Co. would take all that the settlers would grow.
1184. Do you think that sufficient water for irrigation purposes can be obtained from artesian bores without going to the river Darling? I think so for some years to come.

FRIDAY, 29 MAY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.  
The Hon. CHARLES JAMES ROBERTS, C.M.G.  
The Hon. WILLIAM JOSEPH TRICKETT, Esq.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
THOMAS HENRY HASSALL, Esq.  
GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Edward Fisher Pittman, Esq., A.R.S.M., Government Geologist, Department of Mines, sworn, and examined:—

- E. F. Pittman, Esq., A.R.S.M.  
29 May, 1896.
1185. *Chairman.*] You have furnished the Committee with two maps and sections? Yes; both actually represent the same thing. The black patches represent the lowest beds of the Cretaceous formation, as mapped by Mr. Jack, of Queensland.
1186. Is that over the Queensland border? Yes; at the time that Mr. Jack mapped this—that is about eighteen months ago—he was of opinion that it represented the lowest beds of the artesian water-bearing basin, and he ran them up, as he supposed, to the New South Wales border. I then went north with the object of trying to trace these beds down through New South Wales. I first went up to Roma *via* Toowoomba for the purpose of becoming familiar with these rocks. I then came to Stanthorpe, and went west from there.

When

When I got down west of Texas to the southern extremity of these beds, which have been mapped by Mr. Jack as the Blythesdale Braystones, that is the lowest beds of the Cretaceous formation—I found that they differed considerably from those at Roma. From subsequent careful examination I came to the conclusion that they are not the Blythesdale Braystones, but the Ipswich coal measures. I had previously examined those measures at Ipswich, west of Brisbane. I then traced these rocks down through New South Wales. I found that they extend east of Yetman, through Wallangra, Warialda, Tery-hi-hi, to the east of Narrabri, and thence in a more or less south-south-westerly direction, so as to take in Coonamble, and through Terabile Creek, as shown on this map.

E. F.  
Pittman, Esq.,  
A.R.S.M.  
29 May, 1896.

1187. You mean it is an extension of the Ipswich sandstone? Yes; I have yet to prove whether or not the Blythesdale Braystones outcrop in New South Wales. I think it is extremely doubtful; at the same time I am not in a position to say. It is the lowermost bed of the Cretaceous basin. In Mr. Jack's opinion it was the bed which formed the intake of the artesian water. Mr. Jack has traced it for 700 miles. Just before I took this trip a bore had been very successfully put down at Moree. An examination of the rocks brought up in that bore proved that the water was not obtained from the Cretaceous rocks, but from the Ipswich sandstone. Subsequently I examined the core of the Coonamble bore, and found the same fossils in that proving that that and the Moree, and since then another bore put down between Narrabri and Moree, at a place called Woolabrar, were put down through rocks of Triassic age.

1188. *Mr. Wright.*] Does the Ipswich sandstone belong to the Triassic age? Yes. The conclusion one arrives at from this work is that instead of the artesian basin being bounded by a line which comes from Roma in a south-easterly direction, to a point about 40 miles north-west of Texas, and thence down to the west of Coonamble, as shown by the junction of the red and green tints, it really comes through Murphy's Creek, thence in a south-south-westerly direction through a point 15 miles west of Texas; thence across through Wallangra; thence to Warialda; thence generally in a south-south-westerly direction to a point west of Gilgandra.

1189. As shown by the portion tinted red in the map of New South Wales? Yes. These beds between Texas and Yetman I found had an altitude of 1,200 feet. Generally speaking, between that point and Rocky Creek they are found at high altitudes. The conclusion I have arrived at is, that the catchment area of the artesian beds, so far as New South Wales is concerned,—that is to say the intake area—is situated between Narrabri and Texas. But of course the New South Wales artesian basin is largely fed from the catchment area of Queensland. At the same time the portion between Narrabri and Texas supplies a large quantity.

1190. *Chairman.*] What does the pink tint over the Queensland border represent? The Triassic or Ipswich coal measures.

1191. Is that water-bearing? Yes.

1192. Does the pink tint shown on the southern side of the New South Wales border represent the same formation? Yes; and is therefore water-bearing.

1193. What does the green tint represent? Desert sandstone.

1194. Is that also water-bearing? Not in the sense in which we use the words at the present time. It is a very absorbent rock—the beds lie horizontally. It drinks in the rainwater which soaks through to the water-bearing formation.

1195. Is the water-bearing formation underneath the portions coloured green? Yes.

1196. What is the portion coloured black, north of the New South Wales boundary? That is all shown by Mr. Jack as Blythesdale Braystone.

1197. Is the black shown near Roma the Blythesdale Braystone? Yes.

1198. Do you think that what is shown near Texas is wrongly named by Mr. Jack, and in your opinion it is the Ipswich sandstone? Yes.

1199. What does the green hatching on the New South Wales map represent? The old boundary of the Cretaceous basin as tentatively laid down by Mr. Wilkinson. It was necessarily guesswork to a great extent.

1200. Will that have to be extended to the west? Yes; but I cannot tell you where—it is not tested. The general conclusion that one draws from this is, that instead of the boundary being from Roma to Texas, the boundary runs approximately from Murphy's Creek down to Texas. That gives us an additional 200 miles in a straight line of intake beds by a width of pretty well the same distance. How much further north it goes I cannot say.

1201. What additional area does that give? About 19,000 square miles. When I say that this gives an additional intake area, you must understand that it has never been proved anywhere between Roma and Toowoomba, because the Queensland authorities always assumed that the Blythesdale Braystones were the eastern boundary of the artesian water. Although they put down two bores, one at Brisbane, and one at Laidley, one may say that they resulted unsuccessfully. They got a little artesian water in one, but it only gave 8,000 gallons a day. It was not potable water, it contained too much salt. From that they appear to have concluded that artesian water could not be obtained in these Triassic rocks in any quantity. I think one bore was about 1,500 feet, and the other about 2,000.

1202. If they had gone further, would there have been a different result? No, I think the conditions were unfavourable for artesian water. Although that area to the east of the Blythesdale Braystone, in Queensland, has never been proved, we have proved the same rocks within the New South Wales border, with four or five different bores with great success, so I think there can be no doubt whatever that the whole of that area between Roma and Gowrie Junction to the west of Toowoomba will be also artesian water-bearing. All the conditions there are favourable. At Spring Bluff, above Murphy's Creek, the altitude is 1,537 feet, at Toowoomba there is an altitude of 2,000 feet, and then there is a gradual fall westward to Roma, where the altitude is 978 feet. So that the fall of the country is all favourable to artesian water supply. I brought away samples of these rocks from Spring Bluff on the eastern side of Toowoomba, and I found that they were extremely porous, and their composition is in every way favourable for forming intake beds for artesian supply. Then we have proved that the same rocks in New South Wales are largely artesian water-bearing.

1203. *Mr. Wright.*] Can you state the total area of the artesian water-bearing country as far as it is known in New South Wales? I have not taken it out in figures, because at the present time I have not finished tracing or mapping it.

1204. Are you fairly familiar with the geology of the western country? Yes, with a great portion of it.

E. F.  
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1205. What is the area known to be water-bearing now? It is shown on this map by brown tinting. That is the map showing the occurrence of the Ipswich or Triassic rocks. It shows the eastern boundary down to about Nevertire. Then from there it appears to go in a somewhat north-westerly direction, practically up to the Bogan River. The south-western boundary has never been traced.
1206. Are you familiar with the bores put down in various parts of that country? Yes.
1207. Have bores been put down west of the Darling? Yes, from Bourke to Milparinka.
1208. Take your lowest southern portion at Nyngan, how far do you know the artesian water area to extend due west from there? I cannot give you anything south of the Darling.
1209. How far north-west from Nyngan? That is the same thing. We have no successful bores between Bourke and Nyngan.
1210. Are there no successful bores at Killara? Yes, there are some.
1211. Does not that prove that the Cretaceous formation extends as far south as that point? Yes; I think so. My own idea is that a channel of the Cretaceous formation comes right down through Wilcannia.
1212. Will you show the Committee from the map what lines you think the Cretaceous formation follows from place to place? I can only answer approximately. I think the boundary of the artesian basin would probably be found to follow generally a north-westerly direction from Nyngan to the Darling somewhere near Brewarrina. Then it follows down on the northern side of the Darling, and it will probably flow down the Darling somewhere about Wilcannia. There will be a channel along the Darling south of Wilcannia right down. I believe it will go down the Darling under the tertiary beds to the south-western corner of that colony. I think that is one of the outlets. That is not based on definite knowledge; it is my opinion. I think that west of Wilcannia the southern boundary of the Cretaceous basin would extend in the direction of Morphett's Creek, that is about 120 miles west of Wilcannia.
1213. Will you trace it north or north-west? All north of that I regard as the Cretaceous basin proper.
1214. Right across to the north of Australia? Yes. Of course there are patches where bores will not be successful.
1215. Can you give us any further information from your researches as to the outlet of this Cretaceous formation? Yes, there is an outlet on the north to Port Darwin.
1216. I presume that if there is an outlet to the south, the formation would traverse the whole length of the continent? Yes.
1217. So that the whole colony would be intersected by this formation? Yes.
1218. Would that area yield an immense supply of artesian water? Yes.
1219. Have you considered what the possible supply would be? I have never tried to calculate it, because I regard it as a waste of time at present. But it has been done by others. Mr. Jack attempted some three or four years ago to go into the question. At that time he thought the intake beds only had a width of about one-eighth of a mile. Eighteen months ago he found they had an average width of 5 miles. I think it is now probable that they have an average width from Toowoomba to Roma of 200 miles.
1220. Is all that area absorbent of water? Yes, I think so.
1221. If your theory is correct as against Mr. Jack's, the amount of water that would be drained would be very large? Yes.
1222. Do you think that for all practical purposes the Cretaceous formation would give an inexhaustible supply of water? It is a difficult question to answer in one sentence. I think that as long as the rainfall continues to be anything like the average rate it has been in the past there would be no possibility of exhausting the artesian water supply, but I can conceive that if we had a prolonged drought lasting for a number of years the supply would most likely give out temporarily.
1223. If it has been stated to the Committee by scientific men that the present supply derived from the bores can be readily increased thirty-fold, do you think that that is an over-estimate? Not at all.
1224. With our present drain upon the artesian water supply do you think that any possible drought, such as we have ever heard of, would seriously affect it? No.
1225. On the other hand, if they were tapped very largely, and there were a very prolonged drought, you think it is possible to diminish the supply? Yes.
1226. What do you mean by a prolonged drought? I do not think a twelve months drought would affect the water supply unless the number of bores was very largely increased.
1227. Is not twelve months absolute drought almost unprecedented? Yes.
1228. In this colony in 1839, 1840, and 1841, there was what was known as the three years drought when the waters of the Macquarie and other rivers dried up;—would such a drought seriously affect the artesian water supply? I am inclined to think not, for this reason, that these recorded droughts really did not affect the high lands of the intake beds to the same extent as they did the western plains.
1229. When you speak of a drought, you mean a drought over the whole of the intake portion of the colony? Yes, which I can scarcely conceive possible.
1230. So that the question of a drought may be put aside? Yes. On that point I may be allowed to read the following remarks by Mr. Jack, in his paper.

We have shown that an intake at sufficient altitude to account for the flow of water in the artesian bores of the west exists along the eastern margin of the Lower Cretaceous, and having found a simple explanation in agreement with known physical laws, I go no further in search of another. I have argued that the loss of water by the Darling River, and probably a similar loss of water by the western Queensland rivers, proves that the water-bearing strata must lead into the sea, and hence, that unless the strata be periodically replenished, the sea-level would ultimately become the level to which the water would rise. A drought sufficiently long to bring about this result, would, no doubt, have for a prior result the destruction of the greater part of the land fauna of this part of Australia including the *genus homo*. Far short of this, however, we can conceive of the temporary diminution, or cessation, of the flow of some at least of our artesian wells. The amount of water contributed to the water-bearing strata of the Lower Cretaceous formation every wet season, by such rivers as the Darling, is so great, and consequently the amount of leakage into the sea is so great that the quantity abstracted by the artesian wells, large as it is, and even if it were ten times greater, is insignificant by comparison. Finally as the leakage into the sea is so vast and is entirely beyond human control; the drought on our underground supply made by artesian wells is not worth controlling. I make no apology for the fact that my views on this important question are not those which I held twelve months ago.

When he made those remarks his idea as to the area of the intake beds was very much smaller than mine is now.

1231. Is it usual that sandstone formation should contain artesian water? Yes; all the water we get in the artesian basin is in the sandstone. The water-bearing rock itself is of sandstone.

1232. As all the eastern portion of New South Wales is composed of sandstone, is there any likelihood of water being found further east than we have it? No. The Triassic artesian basin is bounded on the east by Palæozoic rocks (carboniferous formation) which occupy a large area. The Triassic rocks, however, form a considerable basin on the Clarence and Richmond Rivers, and this would probably be found to be artesian water-bearing.
1233. What is the formation you have mentioned? Carboniferous or Gympie claystones.
1234. Still is it not of a sedimentary character like the sandstone here? Yes; but it is lying under different conditions. In the first place, it is not porous; in the second place, instead of lying in a basin, it is lying upon end.
1235. Have you had much experience of the artesian water obtained from our bores? I have been around a great many of them.
1236. Is it considered good? Yes; for domestic and irrigation purposes, and it is also used for wool-washing.
1237. Do you think that if we tapped the artesian water so as to allow us to irrigate a large area of the colony it would seriously affect the supply? That is a question about which I could not give a definite opinion. I think a very large amount of irrigation could be done with artesian water.
1238. Do you think it is suitable for irrigation? Yes.
1239. Do you think there is any fear of exhausting the supply of artesian water? It stands to reason that if you covered the colony with bores at a distance 10 feet apart you would exhaust it. It would all depend upon the number of bores.
1240. Would it be safe to irrigate 2,000,000 acres? I should certainly be inclined to think that it would be safe, but I have not considered the question in detail.
1241. Do you think we could safely use sufficient artesian water to irrigate 1,000,000 acres in the western country? Yes.
1242. *Mr. Trickett.*] The scope of our inquiry is rather in the direction of irrigation by means of the River Darling than by artesian water;—would you be prepared to give an opinion as to which you think would be the more preferable mode to adopt? It has never come within my province to consider the question. Although I think the capabilities of artesian irrigation are very large indeed, if any one had asked me without notice which I thought was the most advisable, I should be inclined to think that irrigation from the River Darling would be better, because that would combine other very great advantages, such as providing a waterway.
1243. Do you think river irrigation would be preferable? If one had to leave out other considerations, I am not so sure of that. I can quite understand, for instance, that there might be difficulties in elevating the water from the river in a considerable number of cases, whereas the same objection would not apply to the artesian bores. On the other hand, it might not be possible to get artesian wells in many places where it might be desirable to have irrigation. For instance, on the southern side of Bourke, between Bourke and Menindie.
1244. Do you agree with what we have generally heard, that very little of the rainfall in that district passes down the River Darling? Undoubtedly.
1245. What becomes of the rainfall? I think a large proportion of it sinks into the Cretaceous rocks.
1246. Does it remain there or disappear? It disappears.
1247. How does it disappear—downwards or by evaporation? I think the greater portion of it disappears downwards. It is absorbed by the Cretaceous sandstone.
1248. As far as you are able to express an opinion, do you not think there is practically an inexhaustible supply of artesian water in the district proposed to be dealt with by this scheme from Bourke to Brewarrina? Not on the southern side of the river; on the northern side I think there would be.
1249. Why is the supply not so good on the southern side? The Palæozoic rocks crop out, and the Cretaceous beds do not exist. At Brewarrina the Palæozoic rocks crop out on the southern side.
1250. Is this kind of country sufficiently sloping to give a good supply if the water is abundant? I think it could be managed in the majority of instances. We might occasionally get some areas that would not have a sufficient fall, and trouble might result in some cases from alkali, but not in the majority of cases.
1251. To what extent would this country be improved for pastoral purposes by means of irrigation? I can only say that where I have seen it tried the improvement has been very marked.
1252. Would that be for agricultural purposes? Or for grazing purposes.
1253. Where have you seen the result? At several places on a small scale near Narrabri. There is the Tibbereena Station, within 2 miles of Narrabri. It is done by pumping river water, and it is private enterprise. It is on a comparatively small area of about 100 acres. It was used for growing lucerne.
1254. Is it practicable in this flat country to irrigate thousands of acres for the purpose of improving the whole of the country for pasturage by means of artesian water? I should think so.
1255. Is that country suitable for the formation of canals and drains for the purpose of irrigation;—is the soil sufficiently impermeable to carry the water? Some tracts of country on the western plains are very different from others. Where you have sandy soils undoubtedly the water would soak away, but the sandy tracts alternate with marls or clays which would retain the water.
1256. Supposing the water was kept running for some considerable time, would there not be a skin formed on the soil which would prevent the water from soaking away? That is very probable. It would depend largely upon the solid contents of the water.
1257. Is there a large tract of country there well suited for irrigation? I think so, on the northern side of the river.
1258. Is not the growth of trees in particular localities indicative of a large amount of water underneath? I do not know of any rule to that effect. I have often heard people in the country make statements like that, but it is not my experience.
1259. Do you think irrigation by means of the river, or artesian water, is preferable to making large dams and trying to store the water in those districts? I should think so, on account of the large amount of evaporation on the western plains.
1260. Would it be practicable to store the water? Not to any large extent.
1261. *Mr. Lee.*] Have you had occasion to investigate the intercolonial rights to the waterway of the Murray? No.
1262. Can you say what is now supposed to be the boundaries of the colonies? I have always heard that the southern side of the river was the boundary of this colony.
1263. Do not the Victorians claim a certain portion of the river-bed? I am not aware; but I am under the impression they have always said it ought to be so.

E. F.  
Pittman, Esq.,  
A.R.S.M.  
29 May, 1896.

- E. F. Pittman, Esq., A.R.S.M.,  
29 May, 1896.
1264. *Mr. Roberts.*] Are you familiar with the country between Brewarrina and Bourke? I have been down there. I have never been from Walgett to Brewarrina.
1265. Upon the occasion of your visit was the river navigable at Brewarrina? Yes, from Bourke.
1266. Was the subject of locking the Darling brought before you in any way? No.
1267. When there, did you have occasion to consider whether it would be a wise step? I could not help forming that idea myself, seeing the difficulties of transport in the north-western country between Menindie and Brewarrina. It struck me that it would be a great advantage to the settlers to have a navigable highway between Bourke and Brewarrina.

John Charles Henderson Mingaye, Esq., Analyst and Assayer, Department of Mines, sworn, and examined:—

- J. C. H. Mingaye, Esq.,  
29 May, 1896.
1268. *Chairman.*] What office do you hold? Analyst and Assayer to the Department of Mines.
1269. Have you made analyses of the water obtained on the western plains from artesian bores? Yes.
1270. Are you aware of its qualities as compared with the quality of water of a similar character used in other countries? Yes.
1271. Is it likely eventually that the use of such water from ordinary artesian wells in the west will be injurious to the soil and destructive to plant life, and can you also give us information as to the experience in America in regard to similar water? The bore waters vary considerably with regard to the total solids. Some of them contain only about 35 grains of solid matter to the imperial gallon, while others contain 300 and 400 grains to the gallon. Waters containing from 30 to 60 grains per gallon can, without doubt, be used for irrigation purposes, providing they are carefully used. Where these waters are used the total solids must be taken into account, and also their composition. The chief constituent of many of the bore waters is carbonate of soda. That is not the best of constituents, but at the same time I do not think the quantity is sufficient by any means to condemn them for use. For domestic purposes water containing from 30 to 40 grains per gallon can be used. If any kind of water is swamped on to a place, and there is no chance of drainage, it is bound to act injuriously on vegetation. If care is used, and there is proper drainage, I see no reason why a number of these saline waters should not be used.
1272. *Mr. Black.*] Even if the water is drained off will it not, as a rule, leave a deposit behind? Not to any extent, if there is proper drainage, such as practised in America and in other places. There they have underground drainage, and they leach these salts formed by the evaporation of the water, then by flooding they are carried through and conveyed away by sub-drainage.
1273. Would it not be possible to filter this water? No; they are soluble salts, there being practically no matters held in suspension.
1274. *Chairman.*] Have you any information as to the suitability of this artesian water derived from analysis, and have you a knowledge of the effect of water on soil? I have before me about thirty analyses of different waters.
1275. How do they compare with water used for irrigation in other parts of the world? In some cases our artesian water contains a little more solid matter than the American water, while in other cases our waters contain much more solid matter. Some of the American waters, such as the Tulare Lakes, contain from 76 to 84 grains to the gallon of total solids.
1276. Do you regard all solids as injurious matter? No.
1277. State the grains of injurious matter? There is very little in the water I have mentioned—only 35·0 grains to the gallon. In the Tulare country there are from 20 grains to 60 grains per gallon of injurious matter.
1278. Have these been satisfactorily used for irrigation for a number of years? Yes. Unfortunately in the case of a number of these analyses the amount of injurious salts is not given. As far as American waters are concerned, a large number of them have been used for irrigation, and they have been a great success, although they contain these alkaline carbonates. By the use of chemicals you can neutralise the effects of those alkaline carbonates. Sulphate of lime or gypsum is used on the land proposed to be irrigated.
1279. *Mr. Black.*] How is it applied? On the surface of the ground and ploughed in.
1280. In the places mentioned, when they find the artesian water is injurious, are they able to deal with it? Yes; they have dealt with it in many cases, and got very good results. They have cultivated all kinds of fruit and cereals in some of the arid districts.
1281. How does the soil there compare with the soil in our western districts? Many of the soils in America are already alkaline before the water is applied. With regard to our soils, there is very little alkali in them, so far as they have been examined.
1282. Are you of opinion that our artesian waters do not carry sufficient deleterious matter to cause them to be regarded with apprehension? I would not say that it is not deleterious. It is not a good salt to have in the water. There is more in the New South Wales water than in the American water. But one great thing in favour of their use is, that the soils here are not already alkaline as is the case in America.
1283. Taking into consideration the quality of the water and the soil here, is there any serious risk in irrigation from artesian water being eventually unsuccessful consequent upon the poisoning of the earth? Waters containing from 30 grains to 60 grains of total solids can be used without any fear of their proving corrosive to plant life or to the soil, providing they are carefully used.
1284. What deleterious matter would there be in the water? Carbonate of soda. In the water from Kelly's Camp Bore there are 35·081 grains to the imperial gallon of sodium carbonate.
1285. Is one-half a fair proportion to put down as the deleterious matter in our water? No, it varies very much.
1286. *Chairman.*] May I put your evidence in this way;—in starting an irrigation settlement which would be dependent on artesian water, should the soil be carefully chosen and the well be carefully tested, and should extreme care be taken in dealing with the area. That being done, can we obtain soil and water to enable the settlement to be carried out permanently without any danger? I think so, without doubt. The water should be carefully used. Water containing from 30 grains to 60 grains of solid matter to the gallon can be used without fear. There must be a proper system of drainage, and the soil must be properly tilled.
1287. By a proper system of drainage do you mean a proper system of tilth? Yes, and sub-drainage also.
- 1288-9. *Mr. Clarke.*] Is artesian water considered good for irrigation purposes in all parts of the colony? I should not think so. 1290.

1290. In the event of artesian water being used for irrigation continually, would it be injurious? Not if it is carefully used. It would not be dangerous if the water only contained from 30 to 60 grains of solid matter to the gallon.

J. C. H.  
Mingaye, Esq.  
29 May, 1896.

1291. Is the water obtained from artesian bores as good for irrigation as ordinary river water? No.

1292. *Mr. Lee.*] Have you had occasion to analyse the water from the Darling River? No.

1293. Do you know whether it is suitable for irrigation? I have no doubt in my own mind that it is suitable, but I have never tested it.

1294. *Chairman.*] Will you furnish the Committee with the following information—(1) Analyses of the artesian waters of New South Wales, with regard to solids and deleterious matter, and a comparison of these with American artesian waters used for irrigation. (2) A list of the bores from which the water has been analysed, and a statement as to which would be unsuitable for irrigation purposes. (3) A statement with regard to the method necessary to adopt to prevent the saline matter eventually affecting the soil? Yes, I will furnish the information as soon as possible.

James William Boulton, Esq., Superintendent of Public Watering Places and Artesian Water Supply, Department of Mines, sworn, and further examined:—

1295. *Chairman.*] You have some information with regard to the cost of irrigation at Mildura? Yes, I have a letter, as follows.—

J. W.  
Boulton,  
Esq.  
29 May, 1896.

Dear Sir,

Victoria, Mildura, 30th October, 1895.

In reply to your favour of the 15th instant, we beg to say—there are about 10,000 acres being now cultivated. It is very difficult to give any average return as there are but five blocks in full bearing.

Average holding, —15½ acres; average cost per acre, £50. Area in cultivation, 10,000. Yield per acre, £25 to £40. Cost of production, which includes cultivation and water rates, £6 per acre per annum.

Planted area—Vines .....	About 3,000 acres.
Apricots .....	" 2,100 "
Peaches .....	" 1,500 "
Other deciduous fruit.....	" 1,000 "
Oranges.....	" 900 "
Lemons.....	" 1,000 "
Lucerne, &c. ....	" 500 "
Total .....	" 10,000 "

With regard to the yield per acre, apricots when in full bearing will produce from 6 to 8 tons per acre. Vines according to the pruning and class of fruit required, from 3 to 10 tons per acre.

(Signed) CHAFFEX BROS. (Limited).

James W. Boulton, Esq., Department of Mines and Agriculture, Sydney.

1296. *Mr. Black.*] Have you had an opportunity of observing the difference between crops produced on land naturally watered, and land which has been irrigated? I have seen the ordinary wheat and lucerne crops of the colony, and I have seen the lucerne and maize grown on irrigated land.

1297. Which do you think gives the greater return? I think the irrigated land does. But it must be remembered that where the soil is cultivated with the natural rainfall the climate is altogether different from what it is in the west. The soil where the artesian bores are gets quite hot, and it is really a hot bed where water is applied thus forcing growth.

1298. Do you think the reason for the difference is not so much the qualities of the soils as the fact that the sun has more growing power in the west? I think there is also something in the difference of soil. In the west it is virgin soil, whereas a great deal of the soil which is now cropped in other parts of the colony has been heavily cropped for years.

1299. Do you think that if the irrigated land is under crop for a number of years the crop would lessen? Yes; unless you added to the soil what has been taken out of it. It should also be borne in mind that in a great many of the artesian waters there is a fair percentage of potash salts, which are splendid fertilisers. Mr. Mingaye in a report which he made stated that the amount of potash salts contained in these waters was beneficial to plant life.

1300. Would not the difference between naturally-watered and artificially-watered crops be due to some extent to the fact that the supply of water on the irrigated land was regular? Yes; and at the time when the plant most required to be watered.

1301. Under these favourable circumstances, do you think that the increased return is sufficient to pay for the extra cost of irrigation? Yes, ten times over. According to the letter which I have just read, at Mildura they are getting a return of £35 to £40 an acre from dried apricots alone. They prepare them and export them. In South Australia I have heard that the return from the cultivation of olives runs up as high as £90 an acre.

1302. *Chairman.*] What is the rainfall at Mildura and at Bourke? I think the rainfall at Bourke is higher than at Mildura. I will supply accurate information on the subject.

1303. *Mr. Black.*] In the case of products grown at Bourke, do you think they could compete in the open market with products grown close at hand, when you add the cost of carriage and the cost of irrigation? You can get water carriage from Bourke to Adelaide for about 10s. a ton when the river is up. That would not be a very serious handicap.

1304. Unless you locked the river very much nearer to Adelaide than Bourke, you would not have the river always open? Not always; but there would be an alternative market at Sydney.

1305. If you had to pay 15s. a ton for the railway carriage in addition to the cost of water carriage, do you think that the product would sell in the Sydney market at a profit? I think there would be such an increased production as would enable you to compete with other parts of the colony, especially in the class of products I have spoken of, such as raisin grapes, currants, &c.

1306. Do you think the proportionate increase of crop would not only pay the cost of irrigation, but in addition pay the cost of water and railway carriage to market? I think so, in the case of these special products. Then there is a very fair local market.

1307. Do you think that the local market is capable of extension? Yes; because it will tap the whole of the south-western district of Queensland. There would be a market there for dried apricots, prunes, raisins, and other fruits, also for chaff and maize. A large stock of lucerne could also be grown.

1308. From your report on forty-six bores I find that the revenue per annum is £1,292 9s. 4d., and the expenditure including wages £2,083 18s. 6d., showing an annual loss of £791 9s. 2d., exclusive, I presume, of interest on the capital expended? Yes.

1309.

J. W.  
Boulton,  
Esq.  
29 May, 1896.

1309. Is that only a preliminary loss which will vanish? I think so. When the value of the works is understood, I think they will be a source of profit.

1310. How long have some of the bores been established? The longest about four years. The most recent in that report is Wanaaring. That was completed about a month ago. About seventeen bores are returning revenue; others are not yet finished—we have to erect the pumping appliances.

1311. Do some of the bores which show no revenue show a heavy expenditure? Yes; that is unavoidable.

1312. *Mr. Lee.*] What is the reason for pumping? They are not flowing wells. At one the water rises within 8 feet of the surface, at others within 2 feet of the surface.

1313. *Mr. Black.*] In some cases do you strike water that does not rise to the surface? Yes; we always strike a supply of water before we get on to the artesian water. There are sometimes five or six different supplies of water (some of them artesian) before the main supply is tapped.

1314. In some of these cases you may go down a depth at which you expected artesian water, and you find you have a supply which has not a sufficient flow to come to the surface? Yes; in some of these bores we have gone far deeper than we needed to go. We did so for the purpose of ascertaining the geological formation. We went down 2,000 feet in the Pack Saddle Bore. I believe the supply of water in that bore was struck somewhere about 1,200 feet.

1315. If you had not gone so far down for the purposes of exploration would the water have risen to the surface? No.

1316. Can you make a calculation on the surface, as to whether you may expect to strike water which, at its source, is at such an altitude as to have sufficient power to rise to the surface? Yes, but all your calculations may be upset. You may get on to submerged peak of Palaeozoic rock, with a stratification at a high angle and intruding through the floor of the Cretaceous bed. That peak may be higher than the horizon of the water. We should then have to sink to the right or left to obtain a flow.

1317. How is the land held in the vicinity of most of these bores? It is mostly under pastoral lease.

1318. May not that account very largely for the fact that so little use is made of the bores? Yes.

1319. Would it not be more advisable that this heavy expenditure should be incurred in districts used for agricultural purposes, or on Crown lands available for settlement? Yes, there is no doubt about that. There is an immense area of land now being thrown open in the central division, all of which will become available for homestead settlement. My own impression is, that, if we were to start a series of bores to water a number of selections, the Department of Lands would be able to derive a far greater rental than they will under other circumstances. Water is the most expensive improvement on these properties.

1320. Seeing what little use has been made by pastoralists so far for the purposes of agriculture of the water obtained from artesian bores, do you think that they are likely to make much use of the water which would have to be pumped from the Darling? On most of the stations where they have artesian bores of their own, they have done something in the way of irrigation. On Belalie Station, there is a considerable area under irrigation, also at Weilmoringle Station and several others.

1321. But is not the number very small compared with the total number of stations? Yes.

1322. How do you account for the big neglect of the bores which are provided by the Government? I think the stations have only put in sufficient crops to meet their own requirements. They have not given the matter consideration in a broader way.

1323. Do you know anything of the chemical action of water which contains a heavy proportion of deleterious solids. Does it rot out the roots of vegetation? Where the soda is present in large quantities it acts in the same way as caustic—it would destroy plant life. The great thing is to avoid the direct application of any of these highly alkaline waters to the plants. That is where the system of thorough irrigation comes in.

1324. Therefore, the American system of irrigation from beneath would be preferable almost always in connection with artesian water? Yes; they do not altogether use it under that system. They also use the flooding system. The flooding system is used mostly in lucerne paddocks. Lucerne absorbs a large quantity of this soda or alkali. Sugar-beets and turnips will absorb nearly all the soda that the water contains. Aëration of the water is absolutely necessary. If you apply the water direct from the bore, it does not do half as much good as when it has been exposed to the air.

1325. How do they propose to aërate it? Simply by spraying it. Free oxygen is totally absent from the water when it first comes up.

1326. The water from the Darling would not be deleterious? No; there would be no harm unless the soil was heavily charged with alkali. You would, however, have to provide some system of sub-drainage, because if the water did not get away the salts would come to the surface.

1327. *Mr. Humphrey.*] In the return which you have furnished of the revenue and expenditure in connection with the bores, I find there is one bore at Bourke the depth of which is 1,457 feet; it cost £2,270, and you have against it the word "failure";—can you give any explanation in connection with that? The bore was a very difficult one to put down. There was a great deal of casing used. It was one of the earliest bores sunk. It was through beds of drift and hard rock—600 feet of the latter. The contractor had to put down four or five holes before he finally succeeded in getting through the drift, or whatever it was that blocked him.

1328. What was the reason for discontinuing the bore? Professor David reported on it, and said it was hopeless to go on. We were drilling in Palaeozoic rock.

1329. Is not that within the area which you say should contain artesian water? Yes; it is at the Bourke trucking-yards to the south of the river. We have another bore about 16 miles from that one, in which Mr. Pittman found deposits of the Upper Cretaceous rock, and he thought it was a likely place, and we are going on with it at the present time.

1330. How far is the nearest successful bore to this abandoned one? Seven or eight miles. The Pera Bore, the Walkden Bore, and the Gidgea Camp Bore are all about the same distance; they are on each of the three roads leading out of Bourke to the north and west.

1331. The failure of this particular bore may be attributable to some local cause? Yes; it is quite evident from Professor David's report that the bore at the trucking yards was located on a submerged ridge of Palaeozoic rocks.

1332. There is a bore at Clifton with a flow of 2,000,000 gallons; it was put down at considerable cost; why have you no caretaker there? The man at the next bore—Osaka—is looking after both. They are about 30 miles apart, and they are in the extreme north-west of New South Wales. The traffic there cannot be much until we have the whole road completed and watered. It is an exceedingly dry track.

1333. How far distant is it from the nearest railway station? Over 200 miles.
1334. So that it would not be possible to profitably carry on any agricultural pursuits there? No.
1335. Is any use being made of the water at present? No.
1336. Why is there no return from this bore? There is no settlement near it.
1337. Why was the bore placed there? To open up the road. It was put down primarily in the interests of travelling stock.
1338. Was it a site selected by the Department for any special reason? No; except that it was convenient for travelling stock.
1339. Do travelling stock make any use of it? They will not until we complete the watering of the road. There are two other bores to complete. It is one of the most arid portions of New South Wales.
1340. At Coonamble there is a flow of nearly 2,000,000 gallons per day; what use is being made of that water? The townspeople are using a portion of it; they pay half the cost of the bore. It is our intention, in connection with the Department of Lands, to supply water to a very considerable area of land there.
1341. Is any use being made of it at present for agricultural purposes? No.
1342. How long has that been completed? About a year.
1343. Has anyone applied for land in proximity to the bore with the object of using the water? No; we have had to wait until the Department of Public Works completed their work for the supply of the town, until we knew what water was available for use for irrigation.
1344. Has the artesian water available for some time past being used to any extent for agricultural purposes? No; but it will be.
1345. Can you give a general reason for the apparent neglect of this great aid to agriculture? We have not been in a position to deal with it properly.
1346. If anyone wanted this water would you not supply it? We should if the people applied for it. But I fancy the people there understood the reason was that we were waiting on the Department of Public Works for the completion of their work.
1347. You have 50,000,000 gallons of available water which can be supplied by gravitation, yet little or no use appears to have been made of it. Can you give any explanation? I do not believe the people realise what they have in their midst. They do not know what an enormous asset they possess.
1348. You have apparently a daily supply of 50,000,000 gallons almost unused. If you had 100,000,000 gallons would the condition be changed? Not at present.
1349. Can you give any other reason except that the people do not realise the benefit? No; you cannot impress a pastoral population with the benefits of agriculture.
1350. Do you think the only way to utilise this artesian supply is to bring a railway into proximity with it? Yes, there is no question about that; and also by educating the people as we are trying to do in a small way by establishing little farms and showing what can be grown. In a few years' time we shall do better.
1351. Are some of the bores now not far distant from existing railways? Yes; the Pera bore is within 7 miles of Bourke.
1352. That is not used? That is where we have a small settlement.
1353. *Mr. Clarke.*] Is all this immense quantity of water allowed to flow away? No; it is shut down, if not required.
1354. *Chairman.*] We wish you to supply the Committee with information in the following shape: Mildura land is valued at £50 an acre, that is a rental of £2 10s. per acre, the annual charges are £6 per acre, making a total yearly cost of £8 10s. per acre. I want you to supply us with a statement of the bores which have been put down in this colony, the efforts you have made to lease the land, the conditions and terms, and the success that has attended your efforts. Also state whether there is a reasonable probability of your being able to find people to go on the land near any of these bores. We want you to take any of the districts in America, such as Riverside, Dakota, Los Angeles, or any of these places, and give us a brief statement with regard to the water, soil, cost of production, the value of the land, and the products. Write a paragraph also with reference to the procedure you intend to adopt with regard to establishing settlement at any bore, say near Bourke, the cost of distributing water, what the product is to be, and how it is possible with a sparse population, not sufficient to justify the establishment of works for the drying of fruit, for the people to get rid of their products. Also draw out a statement showing that you offer people the same kind of land, and the same opportunities with regard to water supply, charging only the cost of the water, plus 5s. a year rent, while at Mildura people have to pay £8 10s. an acre per annum.

TUESDAY, 2 JUNE, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.  
The Hon. CHARLES JAMES ROBERTS, C.M.G.  
The Hon. WILLIAM JOSEPH TRICKETT.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
THOMAS HENRY HASSALL, Esq.  
GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Frederick Bickell Guthrie, Esq., F.C.S., Chemist, Agriculture and Forestry Branch, Department of Mines and Agriculture, sworn, and examined:—

1355. *Chairman.*] Have you an analysis of the soils of the western districts of this colony? I have two or three analyses of soils from the neighbourhood of several of the artesian bores in that district.
1356. Have you compared those soils with the American soil where artesian water is used? I can make a general comparison, although I have brought no data with me.
1357. Can you speak as to the danger of applying to these soils water in which there is a large quantity of carbonate of soda? Yes, I can speak generally upon that point. I have here some notes referring to soil

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2 June, 1896.

J. W.  
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29 May, 1896.

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soil obtained in the neighbourhood of the Native Dog Bore. The full analysis of that soil is published in the *Agricultural Gazette*, part IV. The samples were sent to me in order that it might be ascertained whether the soil was good for agricultural purposes, and, more especially, whether it contained much alkali. Sample No. 4 was a mixture of soil with a deposit of sodium carbonate from artesian water equal to 6 per cent. of the entire mixture. The presence of sodium carbonate in the soil to this extent is undoubtedly harmful; in fact, in clay soils one-tenth per cent. of this salt has been found to render the ground untillable. In a sandy soil, however, such as the one under consideration, this objectionable quality is less marked, and there is no doubt that, within certain limits, the presence of a small proportion of alkali is distinctly beneficial. This is chiefly due to the fact that the soil is directly enriched, owing to the property possessed by sodium carbonate of disintegrating the soil, and thus increasing the supply of soluble plant-food, while the process of nitrification is greatly favoured by alkalinity. Against these advantages which it possesses when present in small quantities must be set off the damage done by it when present in excess. It dissolves the humus substances—among the most important of the soil ingredients—and it is quite possible that the whole of the humus may be dissolved and washed away through the soil. It attacks the roots of the plants, corroding and dissolving the bark, and ultimately the wood. It renders tillage operations difficult, and often impossible. Carbonate of soda, when mixed with clay, forms an exceedingly tenacious mass, and the effect of continuous ploughing is to leave the land in hard lumps. Professor Hilgard, of the Californian University, has devoted many years to the study of this question, and we are indebted to him for most of the information obtainable upon this subject. The remedies recommended by Professor Hilgard are—(1) tillage to prevent too rapid evaporation; (2) drainage to wash out and remove the salts; (3) chemical correctives. I made a further examination of a mixture of seven cultivated soils, also from the neighbourhood of the Native Dog Bore. These soils had been irrigated for the previous eighteen months with the bore water, and had borne crops of different natures. The soils were of a sandy nature, mechanically good, and chemically fair. Two of the seven had a slight alkaline reaction, the remaining five being neutral. This justified the inference that the sandy nature of the soil, combined with the method of irrigation adopted, had prevented the accumulation of alkali at the surface. Of five analyses of the soil from the neighbourhood of the Pera Bore, three were very slightly alkaline, and the others were neutral, or slightly acid. They are all good soils, well supplied with plant-food, in excellent mechanical condition, and all but one practically free from alkali. Three of them are particularly good grape soils. Apricots should do well on most of them, though pears and figs, which are less susceptible to alkali, would probably be found the most suitable fruit crops. Cereals would be less desirable than deeply-rooted crops, and such crops are specially desirable which present a large area of leaf surface to check evaporation. Having regard to the fact that it is intended to irrigate these soils with water from the Pera Bore, the nature of this water and the nature of the subsoil must be taken into account. For an analysis of the water I am indebted to Mr. Mingaye. It contains 45 grains of solid matter per gallon, of which 33 grains consist of carbonate of soda. An examination of the subsoil shows it to be remarkably free from alkali, the alkalinity, calculated as carbonate of soda, being only about 0·1 per cent. This freedom of the subsoil from alkali is a particularly encouraging sign, since it is only reasonable to suppose that the effects would be first noticeable in the lower portions of the soil. It indicates also that, provided accumulation of alkali at the surface is prevented, there is no danger of the subsoil becoming unduly charged. In other words, the alkali is readily leached out beyond the reach of the roots. There is, therefore, in my opinion, no danger to be apprehended from the presence of sodium carbonate in the soil, as long as there is free circulation of water, and undue surface evaporation is checked. The analysis of a sample of soil from the neighbourhood of the artesian bore at Moree shows that soil to be quite neutral. Chemically it is fairly rich, and particularly rich in lime and potash—its chief defect being its great stiffness. That soil is an uncommonly stiff clay, and will require special treatment to overcome its stiffness.

1358. Is the water from the Moree Bore good? I believe so.

1359. Have you received an analysis of that water from Mr. Mingaye? I have no such analysis at hand. The water from the Pera Bore is more strongly charged with alkali than any other which has been used for irrigation in that district. I also reported upon six samples of soil from the Wentworth irrigation area, at the confluence of the Darling and the Murray. That soil is sandy and fairly supplied with plant-food, and is admirably adapted for irrigation. The percentage of potash is particularly high, and, in regard to capacity for water, capillarity, &c., the soil is good, and may be expected to be fertile. Under irrigation it should yield good results with any of the crops suitable for irrigation culture.

1360. *Mr. Black.*] Have you any knowledge of the country lying between Bourke and Brewarrina, and in proximity to the Darling? No; I have not been there.

1361. Have samples of the soil in that locality been sent to you? I have examined soil from the neighbourhood of the Pera Bore, which I think is the nearest place. To a great extent, the soils from the neighbourhood of the Pera Bore and of the Moree Bore are similar.

1362. Is the character of the soil as evinced by your analysis of the samples from the Pera Bore suitable for irrigation by artesian water? It may not be suitable for irrigation by all artesian waters.

1363. I mean by artesian water similar to that obtained from the Pera Bore? Provided that the drainage is good, that suitable crops are grown—that is, especially crops which prevent too much evaporation, and the soil is kept in good tilth, I believe that any of the sandy soils will stand the most alkaline of our artesian waters for almost any length of time.

1364. Would the application of gypsum neutralise the bad effects of alkaline deposits? I think that the application of gypsum would be merely temporary in its results, and I believe that the experiments of Professor Hilgard, in America, and of others in India, show that there is no cure but drainage, coupled with irrigation. If the soil has become alkaline, the cure is to irrigate with as good water as is obtainable, and to thoroughly drain. The use of gypsum is recommended, but it is not intended as a complete cure. Good drainage reverses the order of things, which brings about the accumulation of alkali.

1365. With drainage such as you speak of, I presume that the water running off carries with it the alkali, and therefore, the soil is only charged with the amount of alkali contained in the water it absorbs? The alkali is not liberated until the water reaches the surface, and a soil that is bad with alkali, having a white incrustation upon the surface, may, lower down, show no alkali at all.

1366. Then there is no deposit from filtration? No.

F. B.  
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F.C.S.

2 June, 1896.

1367. The deposit is caused only by evaporation? Yes; when the solution reaches the surface the water evaporates, and leaves the salt behind.
1368. Even with good drainage there will be a slight amount of alkali deposited? I suppose that even with the best drainage you will not be able to avoid evaporation.
1369. Would it be possible to construct some appliance which could be used at intervals to remove the alkaline deposit from the surface of the soil? That has been done in India, and also in California, where the deposits are very bad.
1370. I suppose the soil at the Pera Bore would give much better results if irrigated by river water than if irrigated by water from the bore? It certainly would not require so much attention if irrigated by river water, and I should say would probably give better results.
1371. There would be no danger of the deterioration of the soil through deleterious substances being left in it by the river water? No.
1372. But may not the river water take up alkali from the soils with which it comes into contact, and so have a deleterious effect if used for irrigation? I have no doubt that that would be a very likely thing to happen, but I doubt if such water would be charged to anything like the same extent as the bore water is.
1373. Are there any instances of large rivers whose waters are strongly alkaline? I have never heard of any. I do not think a large body of water like a river, however slowly it might flow, would be likely to contain relatively much alkali.
1374. And a river having run in practically the same channel for centuries, would be likely to have washed from its bed and from its banks any alkaline deposit that may originally have been there? Yes. Besides the water in a river is continually being replenished by fresh water, whereas the artesian water is practically stationary, and the carbonate of soda is washed into it.
1375. *Mr. Lee.*] Under these conditions would not river water be more suitable for irrigation than bore water? Certainly.
1376. *Mr. Black.*] It is more suitable primarily, and after lengthy use would increase in suitability at a yearly ratio? Yes, I think so. I believe that in the long run river water would improve the land because it would deposit fertile salts upon it.
1377. The tendency of artesian water is to deposit deleterious instead of fertilising substances? Quite so. That tendency would always have to be combated.
1378. Where land was irrigated for pastoral purposes, drainage on an extended scale would not be likely to be carried out, owing to considerations of expense;—do you think that under those circumstances a lengthy use of artesian water would be likely to be successful? A good deal would depend upon the nature of the soil. If it were a loose sandy soil I do not think that much danger would arise. In sandy soils the water rises rapidly, but it never rises to such a height as it does in clay soil.
1379. Is the soil in the neighbourhood of the Pera Bore of a sandy character? The samples I obtained from the Pera Bore were nearly pure sand.
1380. Then, if the country between Bourke and Brewarrina is similar to that in the neighbourhood of the Pera Bore, it would be possible to irrigate it for grazing purposes with artesian water for a lengthy period without harm to the herbage? I should not like to answer that question, because I have no experience of the action of this water after a long period, though I should not anticipate that there would be any trouble. If the soil in the district to which you refer is of the same nature as the Pera soil, and the artesian water there not more highly charged with alkali than the Pera water, I should not anticipate any trouble, even after a long period of irrigation without drainage.
1381. Nevertheless, the river water would be preferable? I think so.
1382. *Mr. Clarke.*] Is the soil in the neighbourhood of the Pera Bore likely to be benefited by irrigation? I think so, distinctly.
1383. What crops could be grown upon that soil? Am I to take into account the nature of the water to be used for irrigation.
1384. If the soil in the neighbourhood of Pera Bore were irrigated, what crops would it be suited for? I think such things as ordinary vegetables, especially marrows, squashes, and large leaf crops of that kind. It is not wheat-growing country; but the soil would be good for deep-rooted crops. Lucerne would do very well, and grass ought to do well, while it would be excellently suited for many fruit-trees.
1385. Is the water derived from the artesian wells equal in quality to that which could be obtained from the Darling? It would be quite as good if it did not contain an excess of alkali. The Pera Bore water contains a large proportion of sodium carbonate, and one would have to be careful in its use on that account.
1386. *Mr. Hassall.*] Is the Pera Bore the nearest bore to the river? It appears to be so, judging from the map.
1387. Have you any analyses of the water from the Moongalla Bore? No.
1388. Have you any analyses of the river water? No.
1389. Then you have not compared the two? No.
1390. Are you aware that when the river is very low the water becomes brackish? That is a very common occurrence in the interior. I should not be surprised to hear it of the Darling.
1391. How would you account for it? I think it arises from the concentration of the water. When the river is not being supplied with fresh water what water is in it gradually evaporates and concentrates.
1392. Evaporation would have practically the same effect upon the river water that it has upon the bore water? After long evaporation you would get similar water from the river to that obtained from the bores. The water left in the river when it is very low is gradually becoming similar to bore water.
1393. You say that artesian water is as good for irrigation purposes as river water, provided there is no excess of alkali;—what is an excess of alkali? I should be inclined to say that about 30 grains to the gallon would be called an excess. That quantity would, in the long run, become injurious if it were allowed to remain in the soil. Even a smaller quantity would become injurious if not drained away.
1394. But you think that with a perfect system of drainage there would be no difficulty in irrigating successfully with bore water? I do not think that there is any reason to anticipate any difficulty.
1395. Even if you irrigated with river water, it would be necessary to drain the land? I think so. I think that even the best water would, after a time, become injurious if there were no drainage.
1396. Whatever water you use you would obtain better results by having your land perfectly drained? I think so.

F. B.  
Guthrie, Esq.,  
F.C.S.  
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1397. Therefore, if you intended to irrigate, no matter where you proposed to obtain your supply of water, it would be necessary first to properly trench and drain the land? It would be preferable.

1398. *Mr. Roberts.*] Have you compared the soil of our western district with the soils of irrigated countries in other parts of the world? Yes. I have not got the data with me; but I have compared them generally for my own edification.

1399. Can you give the Committee any information upon the subject? I have compared our soils with Californian soils which suffer from alkali, and our soils compare very favourably. We have no alkaline soils such as they have in America and in India, where there are large tracts upon which alkali has accumulated.

1400. Do you see any reason why irrigation should not be as successfully carried on in this country as in America and in India with artesian water? No; the conditions are more favourable here, because we have a clean soil to deal with, whereas in America and India they often have alkaline soils.

1401. We are told that if the scheme before us is carried out the land within 3 miles of the river can be irrigated with the river water;—would much more satisfactory results be obtained by using the river water than by irrigating the water from the artesian wells? There would be no danger of harm arising from the use of the river water.

1402. What harm would arise from using water from the bores? There would be a danger of alkaline deposit, against which you would have to take special precaution. If you used river water you would probably have to take no special care with regard to drainage or with regard to the crops you wished to grow, whereas with alkaline water you would have to be very careful in both directions.

1403. *Mr. Wright.*] What would be the effect of irrigating land for ten years to a depth of 20 inches with water containing 10 grains of alkaline matter? With a sandy soil and good drainage, and assuming you grow such crops as would prevent surface evaporation, I do not think there should be any injurious effect.

1404. What kind of drainage do you think would be necessary? Subsoil drainage.

1405. You would want to trench the land and put drainage pipes into it? Yes.

1406. That would be a very expensive process? It would.

1407. And make it impossible to grow anything but high-priced crops? Except for small areas.

1408. Do you think that, without subsoil drainage, the ground would be destroyed in ten years by the accumulation of alkali? I think there would be a danger of such a thing happening, though I cannot speak definitely, because I have had no experience.

1409. But I presume that if a similar quantity of river water were used, the land would be fertilised? Yes, river water would be preferable.

1410. Have you ever analysed any soil where the boree or myall grow? I am not sure.

1411. What is the analysis of the soil from the Moree Bore? The subsoil there is slightly alkaline and very rich in lime. The Gidgea acacia grows in that district. The ash of that tree is nearly pure carbonate of lime—that is, chalk.

1412. I suppose you have no knowledge of irrigation? No practical knowledge at all.

1413. I gather from what you have said that the soil near the Pera Bore will only be suitable for certain kinds of crops? Yes; it would not grow cereals well.

1414. And, unless perfectly drained, it would in two years become so charged with alkali as to be useless? There would be a danger of its becoming charged with alkali, but it would probably take longer than two years before it became injurious.

1415. *Chairman.*] How long has the oldest of your irrigated areas been in existence? I will supply that information.\*

1416. Are you aware if the application of mineralised water has any bad effect upon our soil? No.

1417. *Mr. Trickett.*] If this artesian water were stored up in large reservoirs, to be afterwards used for the purposes of irrigation, would it become less or more objectionable? I do not think that the storing of it would have an effect upon it, but if gypsum, that is, sulphate of lime, were put into the reservoirs the water would be purified.

1418. Has that plan been adopted in other countries? Yes; it has been largely adopted.

1419. Is it a practicable thing to do on a large scale? I do not know whether it would be practicable to store the water in tanks or reservoirs, but it would be quite practicable to place boxes filled with powdered gypsum in the channels in which irrigated water was flowing.

1420. Is that done? Yes.

1421. If this artesian water were stored in very large quantities, would it not be a very expensive process to purify it? I do not think it would be practicable to purify it by storing it, but if you were obliged to conserve it in that way there would be very little additional cost in purifying it with gypsum, because in some of these places gypsum is pretty abundant.

1422. *Chairman.*] What would you regard as bad water for irrigation purposes? Water containing about 30 grains of alkaline matter to the gallon.

1423. There would be danger in using water containing more than that amount of alkali? Well, say 35 grains to the gallon.

1424. What would you regard as suitable water? Water containing anything below 20 grains to the gallon.

1425. How much alkaline matter does the Pera water contain? Thirty-three grains to the gallon, I think, though I believe that that water has been used for some time with good results. At the same time, I think it is quite on the margin. I do not think that water which was much more alkaline could be safely used.

1426. If water having 35 grains of alkaline matter to the gallon is harmful, it would surely be better to start irrigating from a supply much less alkaline? Certainly.

1427. If you had to deal with the matter you would choose the best soil and the water which contained the least number of grains of alkali to the gallon? Undoubtedly.

1428. Under proper control it is possible to make irrigation with artesian water successful? I think so, certainly.

\* NOTE (on revision) :—The Native Dog was the first to be used for irrigation about 1862. The length of time that has elapsed since then is hardly sufficient to bring about any great difference in the nature of the soil. That it has not done so is proved by the fact that the irrigated crops still thrive in this area.

Percy Scarr, Esq., Principal Assistant Engineer, Roads and Bridges Branch, Department of Public Works, sworn, and examined:—

1429. *Chairman.*] Have you brought a sketch showing the set of the traffic towards Brewarrina and Bourke? I have brought a tracing, showing in full red lines the roads mentioned in the accompanying statement. This statement gives a list of the roads converging at Bourke and Brewarrina. Those marked with an asterisk are mail routes. Five roads are in receipt of yearly subsidies, while the others are more or less improved and have the principal creeks and rivers bridged. [*Vide Appendix.*]

P. Scarr, Esq.  
2 June, 1896.

James Burt, Esq., Draftsman-in-Charge, Information Bureau, Department of Lands, sworn, and examined:—

1430. *Chairman.*] What maps have you brought to show the surveys which have been made between Bourke and Brewarrina? I hand in the county maps of Gunderbooka, Narran, Cowper and Clyde.

J. Burt, Esq.  
2 June, 1896.

1431. Do those maps embrace all the country between Bourke and Brewarrina? Yes; on both sides of the river.

1432. And they furnish the latest information? No; it would be necessary to chart them up to show all the recent alienations, but there has been very little alienation along the river. The land there is mostly held under lease.

1433. Then the maps are practically correct? Yes.

1434. Any alterations would be only matters of detail? Yes.

1435. Have you brought a survey of the Darling? Yes; from Brewarrina to Bourke. It is shown on the tracing I now hand in.

1436. When was that survey made? Part of it was made in 1860, and part in 1875.

1437. Does the course of the river so surveyed show any marked difference from its present course? We have had a comparison made between the original survey of the river and its position as shown by recent surveys of measurements along it, but so far as we can ascertain there is no evidence to show that there has been any alteration in the course of the river. It is possible that there may have been such an alteration, but we have no evidence to show it.

1438. The river is pretty much now as it was 30 years ago? Yes.

1439. *Mr. Lee.*] Do you know the map before the Committee, which shows the tenure of land within 3 miles of the river? That map is, I believe, a compilation from our maps, although I have no knowledge of it. It is on the same scale as the maps I have just handed in.

WEDNESDAY, 3 JUNE, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.  
The Hon. CHARLES JAMES ROBERTS, C.M.G.  
The Hon. WILLIAM JOSEPH TRICKETT.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
THOMAS HENRY HASSALL, Esq.  
GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Hugh Giffen McKinney, Esq., Chief Engineer, Water Conservation Branch, Department of Mines, sworn, and further examined:—

1440. *Chairman.*] Have you a further statement to make? Yes; I have prepared a statement in reply to various questions which were asked during my previous examination, though it is not quite as full as I should like it to be. With reference to Question 671, I find that a general duty or toll of a quarter per cent. on the declared value of goods carried is charged on all cargo passing along the waterways of the Russian Empire. On one of the principal canals in Belgium, a toll equal to about one-twelfth of a penny per ton per mile is charged. This is a canal on which the traffic is very heavy. There seems to be no fixed system on which tolls are levied. In a recent proposal for a direct canal from the Forth to the Clyde, in Scotland, the toll was assumed at the high rate of three farthings per ton per mile. I find that in Italy, as well as in France, no tolls are levied on any of the waterways. With regard to the construction and control of inland navigation works, the United Kingdom appears to be the only country in which the Government leaves such highways entirely to private enterprise. I could not lay my hand upon any definite information as to the tolls charged in England, because the inland waterways there are all in the hands of private companies. Some of them are in the hands of railway companies, which have an interest in making them unsuccessful. In the course of my examination by the Committee I have been asked many questions as to whether irrigation by pumping is remunerative; whether it would not be much preferable to irrigate by gravitation; whether crops produced by means of lifted water could compete with crops grown on land which did not require irrigation; and several other questions of a like nature. I wish to point out to the Committee that such questions cannot be satisfactorily answered in a general way. The difficulties in the way are similar to what would arise in answering the questions whether it pays to use bone-dust as a manure; whether crops raised by the aid of bone-dust can compete with crops raised on rich land which does not require manure, and so on. In regard to the question whether it is not preferable to irrigate by gravitation, it is necessary to bear in mind that, as a general rule, headworks of a more or less expensive character are required to divert water from a river. Then it generally happens that expensive cuttings have to be made before the water reaches such a level relatively to the adjacent land as will render flow irrigation possible. Unless, therefore, the water thus furnished be utilised on a scale commensurate with the outlay on headworks and deep cuttings the results are not satisfactory. In such cases, if water is obtainable by pumping at or near the land intended to be irrigated, it might prove much more satisfactory to pump the water than to bring it by gravitation. Another point in connection with this has to be borne in mind and that is, that when water is used in the immediate neighbourhood of the source of supply the loss by percolation and absorption is reduced to a minimum. Thus, when water is brought

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brought from a considerable distance, as is usually the case in gravitation works, the proportionate loss greatly exceeds that which occurs with an ordinary pumping scheme. I have also been asked the question whether I know of any country where irrigation by pumping is successfully practised. In reply to this, I find that, as a general rule, every country in which irrigation is resorted to can show instances of successful irrigation by pumping or lifting the water by appliances of some kind. In India such irrigation has been practised on an enormous scale, from time immemorial, and the case of Egypt is similar in this respect. In Italy and the United States pumping for irrigation has been successfully adopted on a considerable scale. In India the wells vary generally from 10 feet to 60 feet in depth. In the parts of the Punjab with which I was familiar the depths ranged generally from 25 to 45 feet in depth. The appliances used for pumping are of a very clumsy description, and notwithstanding the cheap labour by which they are worked, the cost of the water is very high judged by the standard at which water could be delivered by pumping from any of our western rivers. In Egypt similar primitive appliances are extensively used, but in recent years British and other capitalists have introduced a great number of pumping engines with which water is raised and sold to the cultivators. In the United States not only are steam pumps increasing in number and favour for irrigation purposes, but, in addition, windmills are being erected for this purpose in immense numbers. The area of lift irrigation in the Madras Presidency is about two millions of acres, in the North-West Provinces it is about 360,000 acres, and in the Central Provinces 120,000 acres. In the Cawnpore district, where irrigation is extensively practised, many of the wells used are 60 feet deep. I have with me a copy of the *Scientific American*, in which it is stated that 2,000 farmers in Texas are now raising water for irrigation purposes by means of windmills. In regard to irrigation from wells, I was asked to quote instances in which irrigation was successfully practised by pumping from depths of 35 feet or more. There are hundreds of thousands of acres in India irrigated in this way with very primitive appliances, which make the raising of the water very laborious and costly. Indian, Egyptian, and European instances may all, however, be objected to on the ground that conditions are different to those existing here. The best places to rely on for a reply to the inquiry are America and Australia. In regard to the former, I have been unable to find details of depths from which water is pumped in the numerous places in which irrigation by lift is practised in the Western States; but I have met with the statement in the irrigation papers that irrigation by pumping where the soil is suitable is practised for lifts varying up to 50 feet. I may be permitted to point out that the difficulty in replying to this inquiry is similar to what I should experience if I were asked whether I knew of any place where cultivation was successfully carried on with the aid of bone-dust or other manure, which was brought from a distance of over 10 miles. I might feel assured that there were numbers of such places, but I should have difficulty in obtaining details. Fortunately, in this colony we have several instances of pumping successfully from such depths. In the first place there is a considerable number of instances on the River Darling where water is pumped under much less advantageous circumstances than will exist when the locks and weirs are constructed. One of these irrigators published a letter in the *Sydney Morning Herald* of 27th of last month, in which he expresses himself as highly satisfied with his operations. In the course of a trip by steamer from Walgett to Wentworth, I saw a succession of patches of irrigation, and had an opportunity of going over the irrigated land at Boorooma, Winbar, and one or two other places.

1441. *Mr. Lee.*] Was the irrigation you saw between Walgett and Bourke or between Bourke and Wentworth? It was scattered all the way along the river. The first place at which I saw irrigation practised was above Walgett. At Narromine, on the Macquarie, Mr. W. O'Neill has for a number of years used a well over 50 feet deep for providing a supply of water for irrigation with most satisfactory results. On the Kameruka Estate, water was pumped to a height of 246 feet for irrigating lucerne, and in seasons when hay was expensive it was considered that irrigation paid under even such disadvantageous conditions. The question is simply one of the value of the produce as compared with the cost of water, and on this point some of the most experienced irrigators in Victoria have given the opinion that even for cereals it will pay to irrigate if the cost of the water amounts to £1 per acre of crop. In connection with this subject, I find that in reply to Question 701, I mentioned that on pastoral estates the only irrigation I have seen which was carried out on a considerable scale, and in a business-like manner, is that on the properties of Mr. Wills Allen and Mr. Gatenby. I wish to add that I have seen many instances of successful irrigation on pastoral estates, but they were more in the nature of successful experiments, being as a rule on a small scale. It is only right to add that I understand there are some instances of successful irrigation on a considerable scale which I have not seen. As regards instances of successful irrigation in Victoria, I have concluded that the best reply I can give is to refer the Committee to the report of the first irrigation conference held in Melbourne in 1890. I am aware that the area of irrigation has considerably extended in Victoria since then, but the report mentioned is the latest of its kind which I can obtain. With regard to the cost of pumping, I went carefully into the matter some years ago when inspecting irrigation which was entered in the competition for National prizes. The total lift at Mr. Wills Allen's irrigated farm at the time of my last visit was about 31 feet. For the purpose of comparison with charges from canals, I calculated the cost of supplying a flow of 1 cubic foot per second, and found that the annual cost of this quantity, after allowing for interest and cost of working the plant, was about £70. At Mr. Gatenby's property the total lift at the time of my inspection was 23 feet, and the cost of a flow of 1 cubic foot per second was about £50. In a paper published by Mr. George Gordon, member of the Institution of Civil Engineers, he gave a statement of results of experiments and calculations which he had made to determine the cost of pumping 1,000 cubic feet of water. The results arrived at were as follows:—For a 6 feet-lift, 0·19d. per 1,000 cubic feet; for a 24-feet lift, 0·32d.; for a 25-feet lift, 0·42d.; for a 39½-feet lift, 0·83d.; and for a 100-feet lift, 12½d. These figures are in substantial agreement with those I obtained. In the 39½-feet lift, Mr. Gordon's are equivalent to a cost of £109 per annum for a flow of 1 cubic foot per second, while my estimate of the average cost of this quantity for the 31-feet lift was £70 per annum. Mr. Gordon's result for a 24-feet lift is equivalent to an annual charge of £42 per annum, as compared to my estimate of £50 per annum for a 23-feet lift. Mr. Gordon's result for a 25-feet lift is £55 per annum for 1 cubic foot per second. I may add that in my estimates in the two cases referred to I concluded that the annual cost of a cubic foot per second in Mr. Wills Allen's case was likely to vary from £60 to £80, and in Mr. Gatenby's case from £45 to £70. Making ample allowance for defects in working, a flow of 1 cubic foot per second should irrigate 60 acres of lucerne, and produce on suitable land five or six fair crops in a year.

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1442. In your calculations you have allowed for interest upon the plant and working expenses, and have made an annual charge? Yes.

1443. Have you made a deduction for depreciation? Yes.

1444. *Chairman.*] From your experience of irrigation in this colony, what would be a fair amount to regard as the yearly water cost of irrigating such land as we have on the Darling? I think that £1 per acre per annum would be a fair allowance.

1445. *Mr. Wright.*] You proposed to charge a pumping license fee of 5s. per acre;—would the cost of obtaining water be £1 in addition to that for pumping and distribution? Yes; though in all probability the engines used for the pumping plant could also be used for sawing wood, running chaff-cutters, and for other purposes, and that might be reckoned in some measure as a set-off against the cost of irrigating.

1446. *Chairman.*] Will you tell us what is being done at Hay in the way of irrigation? At the present time things are at a standstill there. The Municipal Council of Hay was constituted an irrigation trust under the provisions of the Hay Irrigation Act. They obtained possession of about 12,000 acres of land, which had previously constituted the temporary common there, and they asked that I should report on the best way of irrigating it. I visited the irrigation area, as it was termed in the Act, and I recommended that the water should be pumped from a place just outside it. That place was better than any site within the irrigation area, and I was told that the trustees would have no difficulty in purchasing it. After they had purchased it, they asked that I should take the necessary levels for an irrigation scheme. I had those levels taken, and afterwards I had a plan prepared on which they were shown. I pointed out that that plan was so complete that the trust could easily have the best lines of channels marked out by following it, as contour lines were drawn all over the plan. They decided at last, however, that I should have the lines of channel marked out on the ground. I had that done, and all the information I had acquired was handed over to the trust. The trust then decided to take up the matter itself, and carry it out with funds that would be raised locally. The first step the trustees took was to change the pumping site. They adopted a place much nearer to Hay, and on much lower ground than the place which I had recommended, and they departed still more from my recommendation in buying a second-hand pumping plant, instead of a new one. The pumping plant which they bought was unsuitable. They also found that, having gone on to lower ground, it would be necessary to construct either a flume or an embankment. They decided to construct a flume, which, in order that it might be as cheap as possible, they made very light, and a high wind some time afterwards threw it over. Then for some purpose, which I could never quite understand, they made a reservoir, which is in an unfinished state now, and they want the Government to assist them in completing the scheme.

1447. What has been the expenditure up to date, and what will it cost to complete the work? The amount that appears to have been expended up to date is about £4,300, and I am engaged at the present time in preparing an estimate of the cost of completing the scheme, which will probably be £1,500, more or less. It is not the cost of the scheme that will be the greatest disadvantage; it is rather the unsuitable character of the pumping plant for the work which it has to perform.

1448. How high are they going to lift the water? Their lift has been increased by some feet, owing to the change which they made in regard to the pumping site, and it now averages about 27 or 28 feet. The maximum lift will be 34 or 35 feet.

1449. Will you give us a brief outline of what has been done at Wentworth? At Wentworth the conditions were very similar to what they were at Hay. The Wentworth Municipal Council was constituted an Irrigation Trust, and obtained possession of the temporary common there, the intention being to cut the land up into small areas for irrigation purposes. The Trust employed an engineer and a manager, but it was very unfortunate in several ways, and particularly because, owing to the financial crash, it was not able to carry out the idea of raising funds for the construction of the necessary works. After considerable delay the Trustees therefore decided that their best plan would be to petition the Government to dissolve the Trust. That has been done. The Government has taken over all the liabilities, and the assets of the trust, together with the powers conferred upon it by the Act, and has let contracts for the supply of pumping plant, and for the construction of a pumping well and engine-house, both of which are now in process of being carried out.

1450. *Mr. Hegan.*] Prior to this, were you consulting engineer to the trust? In a manner I was. The Government, under the provisions of the Wentworth Irrigation Act, had to approve of any scheme brought forward. The trustees brought forward a scheme which was much too expensive, and to which there were other objections, though the objection on the score of expense was sufficient to destroy it.

1451. How much did the trustees expend? They obtained an overdraft from the bank for preliminary expenditure, and the total amount which they expended, with interest, amounted to about £1,100.

1452. What was the amount of the overdraft? £1,000.

1453. Which the Government would have to pay? Yes. The people there showed themselves to be very public-spirited, and made themselves personally liable for the advance. They also intended, if things had not gone wrong in financial matters, to raise the capital necessary to carry out the work. The terms of the Act gave the Government power, if it considered it necessary or advisable, to dissolve the Trust, and in doing so they took over the 10,000 acres of land which belonged to the Trust.

1454. But which originally belonged to the Government? Yes. The Act also gives the Government power to pump from either the Darling or the Murray.

1455. Which the Government had before the land was handed over to the trust? No doubt they had the power, but it was not defined.

1456. Taking all things into consideration, this has been a bad bargain for the Government? It has been an unfortunate affair. The Government are only getting back what they gave.

1457. But they have £1,000 to pay in addition? Yes; the average lift at Wentworth will be 25 feet or a little over.

1458. *Chairman.*] You are going to pump from the Murray there? Yes.

1459. You will not go to Fletcher's Lake? Not at the present time. I think Fletcher's Lake was left outside the Trust.

1460. But it is on the common? I do not think it is. It was not included in the temporary common on that side. There are one or two other points to which I wish to refer. I was asked by Question 704 if it was not a fact that the Government of Victoria had spent over £5,000,000 on irrigation works, and I have received a statement which shows, I think, how that amount may have been arrived at. The sum of  
£4,545,000

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- £4,545,000 includes what has been spent upon schemes connected with country towns water supply, and also the cost of the great Coliban scheme at Bendigo. The amount of money spent by irrigation trusts was about £927,000.
1461. Under £1,000,000? Yes; but there was a great deal spent by town trusts and rural trusts, and mixed trusts.
1462. *Mr. Wright.*] For irrigation? No. In the case of the so-called Water Trusts the money was generally expended to provide water for stock and domestic purposes.
1463. But, if I am not wrongly informed, a number of small subsidiary schemes in Victoria were originally designed to supply water for stock, and also for irrigation purposes? The sum expended by the mixed trusts was about £386,500.
1464. Can you tell us what practical work has been done in the shape of irrigation by the expenditure of this money? I have no recent information upon the subject, although I know that a certain amount of irrigation has been done. In my former evidence I mentioned that a great deal too much money had been expended in Victoria upon works of this kind. I did not mean by that statement that the works had been extravagantly or wrongly constructed; but that they had been in advance of requirements.
1465. You contend that the money was spent injudiciously? Quite so.
1466. Can you get us information as to the effect of this expenditure in Victoria—as to what irrigation has been done, and whether that irrigation has been successful or the reverse? I have been able to get a good deal of information about the work of private irrigationists; but there seems to be no late information available as to what has been done by the Government. The great work on the Goulburn, where they have a weir which cost over £100,000, is not doing one-tenth of what it should do.
1467. *Chairman.*] Do you know how many acres of irrigation there are in Victoria? I have not been able to ascertain that. In the report of the Irrigation Conference of 1890, mention is made of the number of cases in which individual irrigationists have been very successful; but I have been quite unable to obtain any recent report. Another point upon which I was asked to obtain information was as to the extent to which water would be backed up in the tributaries of the Upper Darling, supposing that the proposed scheme were carried out. In the Bogan the backing up would be scarcely worth taking into account. In the Culgoa the water would be backed up about 2 miles. In the Bokharra the backing up would not be worth taking into account. In the Marra Creek the water would be backed up for about 2 miles, and in the Macquarie River it would be backed up for about 6 miles.
1468. What effect would the weir below Brewarrina have upon Cato Creek? Cato Creek will not be affected, neither will the Tarrion Creek.
1469. What effect would the construction of the proposed work have upon the billabongs along the river? As a rule very little, because in most cases the billabongs take out at a high level. There would be a certain amount of backing up in them; but that only means that so much more water would be stored, though the quantity stored would not be so large as to justify a special survey to determine it.
1470. How does the country to the north of that portion of the river under consideration—take for instance the part between the Culgoa and Bourke—slope? Towards the river.
1471. Are the banks higher than the surrounding country? The greater height of the banks is noticeable in places, but the fall-away at the back is not so great as it is on the Murrumbidgee and the Lachlan.
1472. Then, if water is lifted to the height you mention, it will not submerge land which is not now usually flooded? No; the weirs will not be sufficiently high to cause any inundation.
1473. You propose to construct seven weirs in order to allow for the rise of from 40 to 45 feet between Bourke and Brewarrina? Yes.
1474. If it were possible to have a fewer number of weirs there would be a saving in construction and in maintenance, and the quantity of water stored would be greater? Yes.
1475. I understand that you have not allowed for higher lifts because you object to placing immovable weirs in the Darling, and the shutter weir which you propose to use would not be suitable for a greater height than that allowed for in this scheme? I should not like to say that the shutter weir would not be suitable, but I did not like to venture beyond instances which I know of.
1476. You regard this form of construction as not likely to be easily manipulated if the weirs were made higher? I should not like to say even that. I know that the shutters would become heavy and difficult to work, but I am not aware that the use of them in higher weirs than I propose has been objected to in any way. I do not, however, care to go beyond precedents.
1477. Will you tell us why it is absolutely necessary to have a movable weir? I came to the conclusion that fixed weirs were objectionable after I had made a thorough inspection of the river in flood time, and after I had seen how easy it is to change its course. I then found the river to be changing its course in numbers of places, and in some cases the steamer went through the new channels which had been made.
1478. We were informed yesterday by the Department of Lands that, so far as they could judge from their plans, there had been no change;—I suppose you refer to changes in detail? If a flood were to take place now I could point out dozens of places where a change was proceeding rapidly. Of course the river does not go to a very great distance from its ordinary course, but the tendency of its flow is to cause loops, and in flood time the necks of land round which these loops wind are cut through.
1479. Although changes are continually going on, it is possible that surveys for alienation purposes would not be sufficiently close to enable the Department to take notice of them? Yes; I think that, as a rule, the surveys along the Darling have not been carried to any great detail. A great deal of the land has not been surveyed in small portions, so that it would be easy to overlook moderate changes in the river.
1480. Supposing you could get from Bourke to Brewarrina by having a lift of 10 or 12 feet at each weir, would that be likely to submerge the surrounding country? No.
1481. Your only objection to such a plan is on the ground of construction? Quite so.
1482. Are there no sites where permanent weirs could be safely constructed? I think there is no place where a permanent weir would not be more or less objectionable. The only place where I should propose to make a permanent weir is at Brewarrina. The design I intend to adopt there allows a permanent weir to be carried across at what is the mean level of the top of the rocks. At that place there are large boulders lying above the solid rock.
1483. *Mr. Lee.*] With reference to the extent to which ana branches and other depressions of the surface are likely to be filled if this scheme is constructed;—I suppose your estimate is based upon the assumption that there will be seven weirs? Quite so.
1484. Can you tell the Committee where these depressions are situated? I have noted their position; but I have not sufficient details to enable me to estimate the quantity of water which could be stored in  
any

any of them. I noted all the principal outflows and inflows, but to make a survey of them would be a very laborious piece of work, which it did not seem to me the circumstances would quite justify.

1485. The distances between the weirs are given on the map as follows:—Between No. 1 and No. 2, 25½ miles; between No. 2 and No. 3, 9¼ miles; between No. 3 and No. 4, 37¼ miles; between No. 4 and No. 5, 25½ miles; between No. 5 and No. 6, 26½ miles; and between No. 6 and No. 7, 9 miles. Why are locks Nos. 2, 3 and locks Nos. 6 and 7 placed in such close proximity? Because the natural fall of the river is greater between those places. Although the fall of the Darling, taking it as a whole, is very uniform, there are some lengths in which it varies considerably. In one length you might have a fall of 4 or 5 inches to the mile, and in another length, a fall of 2 inches to the mile.

1486. If it became necessary to reduce the number of weirs, could you safely dispense with No. 2 and No. 6? I do not think so. They are at places where there is a considerable fall in the river.

1487. If you had to reduce the number of weirs, which of them could you dispense with? Either the weir at Beemery—No. 4—or No. 5.

1488. Could you safely dispense with any more without destroying the general efficiency of your scheme? I think not. I looked carefully into the matter to see what change could be made. That part of the river below Beemery is very low, and it would be possible to put a weir between No. 4 and No. 5 which would hold up sufficient water for a long distance back.

1489. If weirs No. 4 and No. 5 were omitted, would the depressions on the surface be filled with as much water as if the scheme were carried out as now proposed? There would not be much difference, because the weir that would take the place of the two weirs which were omitted would be higher than either of them, and the quantity of water stored is increased as you increase the height of a weir, because the river widens out.

1490. Would your shutters be able to stand with an increase of height? I think so.

1491. Would heavier stonework be necessary? The foundations would have to be slightly heavier.

1492. Would heavier work be required for the locks? Slightly heavier work; but the alteration would not add materially to the cost of the locks.

1493. Would it impair navigation at all? No. We should have to fix the weir at a sufficient height to keep a minimum depth of 6 feet in the river.

1494. What do you estimate to be the average cost of a weir and lock? About £20,000. Some would cost more and some less.

1495. What would No. 4 and No. 5 cost? They would be about the most costly, because the foundations in those places are worse.

1496. What do you estimate that they would cost? Speaking from memory, the cost of either of them would be £2,000, or £3,000 more than the cost of the lock and weir at Vincent Rocks.

1497. An increase of not more than 12 per cent.? Not more than that. There is a saving in cost by reducing the number of weirs at that particular place.

1498. A reduction in the number of weirs would not necessarily mean the destruction of the scheme, either so far as navigation, or so far as irrigation was concerned? No.

1499. In proposing the scheme, you thought it desirable to so plan it that no possible difficulty could arise in the future? Quite so; I wished to keep within cautious lines.

1500. As this is to a certain extent an experimental work, could you not submit a proposal by which the end in view could be obtained at a minimised cost? I could do that before the end of the inquiry.

1501. *Chairman.*] How much water have you directly above your shutters? The depth varies slightly, but it is about 12 or 13 feet, as a rule. I thought seriously of having only one weir instead of weirs No. 4 and No. 5, and my reason for deciding to place this scheme before the Committee as it is now was that I wished to keep within precedents and on very cautious and safe ground.

1502. Keeping well in view the experimental nature of this work, you are of opinion that a scheme could be prepared which would serve the same ends at considerably less cost? Yes; I believe that a reduction in cost could be made by altering the scheme in the way suggested.

1503. As this is an experiment, would it not be wise to proceed slowly? Well, the river is so uncertain that we shall be compelled to do so. We could start at any time with the Stony Point and Vincent Rocks weirs; but before they were finished and it was time to go on with another weir, there would probably be a flood, so that, under any circumstances, we shall be able to see how the Bourke lock and weir will work before commencing weirs in the position of No. 4 and No. 5.

1504. *Mr. Lee.*] What view was held in your Department as to the intercolonial riparian rights of the Murray and the Darling;—do you consider that New South Wales is entitled to the whole of the water-courses of the Darling and of the Murray? Well, of course, part of the watercourses of those rivers is outside the boundaries of the colony.

1505. Do you act under the division laid down in the Constitution Act? The Constitution Act leaves matters on the Queensland border in a different position from those on the Victorian border. The whole of the River Murray on the Victorian border lies within New South Wales.

1506. It is so claimed and held by us? It is claimed but not held.

1507. The claim is disputed by Victoria? Yes; but Victoria has no grounds for disputing it.

1508. As a matter of fact Victoria exercises the right to take whatever water she requires? Yes.

1509. So that practically Victoria does not recognise our claims? No.

1510. Were you able to obtain information from the Minister in regard to the subject of tolls? I did not succeed in seeing the Minister about it, but I saw the Under Secretary, and his opinion was practically what I have expressed.

1511. But you have no definite information? No; I have not yet been able to obtain any definite information from the Minister upon the point.

1512. *Mr. Wright.*] Mr. Williams in his report says that to erect a lock and a weir on one channel of the river is not practicable, and that such a work would be a complete failure? I differ from that opinion, and so does Mr. Gordon. I may mention that Mr. Williams selected a certain site for a lock and weir on the River Darling; but when I passed the place in a steamer during flood time, the river was flowing in four or five different channels.

1513. *Mr. Humphery.*] In a report before us, on the locking of the Darling, I observe that it is proposed to place the locks across the necks of land round which the river winds. In this matter you differ from Mr. Darley and Mr. Williams. Will you give us your reasons for your opinion? In the first place, the formation

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formation of new channels across the necks of bends is going on constantly, and a very slight obstruction in the river increases the process. Then, too, necks of land round which the river winds are generally very low, and the effect would be, if the locks and weirs were placed as suggested in the report before you, that in flood time the water would create a scour along each of the outside walls of the locks. Unless there were heavy embankments on both sides of the lock a channel would be scoured through the neck of land in which it was situated parallel with each wall, so that the lock would be left standing by itself.

1514. Would the same thing take place if the locks were made as you propose to make them? No; because the natural conditions are not interfered with. The suggestion contained in the report before the Committee would, if carried out, seriously interfere with the natural conditions of the river. I know that in some cases the course of the river has been changed by a tree which has fallen into the loop of a bend. If a falling tree would change the course of the river, much more would a permanent weir do so. I believe that the bar across the river above Brewarrina has had a great deal to do with the formation of Cato Creek.

1515. What would be the difference in cost between the two arrangements? The plan suggested in the report would be more costly than that which I propose, because the intention was to carry the lock walls up above flood-level.

1516. Have you had any experience in connection with the construction of shutters, such as those you now propose to use? No. I have undertaken the construction of many weirs, and of a number of locks; but not with shutters precisely similar to these. These shutters have come into use in America only in comparatively recent years, though before that they were in use in France. There are one or two movable weirs of the kind in England; but until lately, England was very much behind in these matters.

1517. Can you tell us where there are movable weirs of the kind you propose? They are in operation in France, in America, and in India.

1518. Have they been a success? Yes. The *Scientific American*, of 1st August, 1891, shows a movable weir on the Ohio River at Davis Island, Pittsburgh. It is on a very much larger scale than those which I propose.

1519. How is that weir worked? In the same way as we propose to work the weirs on the Darling.

1520. Are the shutters of similar width and design to those which you propose? The shutters are very similar in design.

1521. *Chairman.*] Are they in every instance made of wood? Yes; in every case that I have seen any mention of.

THURSDAY, 4 JUNE, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.	CHARLES ALFRED LEE, Esq.
The Hon. CHARLES JAMES ROBERTS, C.M.G.	JOHN LIONEL FEGAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	THOMAS HENRY HASSALL, Esq.
HENRY CLARKE, Esq.	GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

John Charles Henderson Mingaye, Esq., Analyst and Assayer, Department of Mines, sworn, and further examined:—

J. C. H.  
Mingaye, Esq.  
4 June, 1896.

1522. *Chairman.*] You have a statement to make upon various points which were suggested to you when you were last before us? Yes; I was asked for analyses of the waters from the various artesian bores of this colony, having regard to the solid and deleterious matter contained in them, and for a comparison of those waters with the waters used in America for irrigation. I hand in a tabulated statement showing the composition of the waters from forty-one artesian bores [*Vide Appendix D*], and a second statement showing the salts contained in them which, if present in excessive quantities, are considered detrimental to plant-life, together with a list of the bore waters which would be useful for irrigation if carefully used and certain precautions taken to which I shall refer later on. [*Vide Appendix D1.*] A third statement [*Vide Appendix D2*] gives analyses in tabular form of American artesian and lake water which is used for irrigation. With regard to the first statement [*Vide Appendix D*] the water considered unsuitable for irrigation is marked with an asterisk, while that which is considered questionable is marked with a dagger. The number of bores in which the water is unsuitable is seven. The method considered necessary to adopt to prevent the saline matter in the water from eventually interfering with the soil is a thorough system of underground drainage, so as to procure a preponderance of the downward motion of the moisture, thus by occasional leaching of the soil, dissolving out a quantity of the alkali salts on the surface where it is most injurious. Under-drainage is the general and absolute correction for the alkali. To flood the land, and cause under-drains to be laid reasonably apart, which shall have run some time will, to a great extent, end the trouble, not only for the time being, but for years—providing that soluble beds of alkali do not exist at some depth below the surface. The soils, especially if they are clayey, should be ploughed deep and pulverised thoroughly, and prepared for underground and deep drainage. With regard to the rotation of crops, by which is meant planting of root and forage plants which are known to absorb these alkaline salts, and thrive in soil containing alkali, Professor Hilgard has shown that beets, carrots, and many other root-crops

root-crops and forage plants are known to absorb a large amount of these alkaline salts. In a valuable paper entitled "Australian Salt-bush" (*Atriplex Semibaccatum*) a forage plant for alkali soils, by M. E. Jaffa, Ph. B., Instructor-in-Charge of the Agricultural Laboratory, University of California, the following information is given:—"A perennial herb, very much liked by sheep, thus considered among the best saline herbage of the salt-bush country. Mr. W. Farrer pronounces this herb as wonderful for its productiveness and its drought-resisting power. At the experimental station near Tulare, the herb, or bush, has been planted with excellent results in some of the worst alkali spots of the station grounds; single plants having reached a diameter of 16 feet in one season. The yield of a full cut is about 20 tons of green material per acre. The large proportion of ash in the bush, and the fact of the plant yielding such excellent results in some of the worst alkali spots is one of great interest. It was found on analysis of the ash that 550 lb. of the air-dried matter contains about 110 lb. of mineral ingredients. Of this extraordinary amount of ash, nearly 44 per cent., or about 48 lb. is common salt, and about 15 per cent., or 17 lb. more is soda in other combinations; in the crude ash mainly in the form of carbonate of soda. The amount of potash, lime, and phosphoric acid are relatively small, thus rendering the salt bush excellent for "desalting," or freeing the soil from objectionable soda compounds." By the use of gypsum (calcium sulphate) in small quantities the corrosive action of the alkali formed in the soil can be remedied to a great extent by the conversion of the carbonated alkali into the "white," or neutral alkali, which is much less injurious than the "black," *i.e.*, alkaline carbonates and organic matter. The water could also be freed to a great extent from the carbonated alkali prior to use, by slowly passing the water through a length of troughing containing coarse gypsum (plaster of paris) which will alter the character of the salts into neutral salts. If it is a question as to the use of these waters in preference to river waters for irrigation, there can be no comparison between them, as the latter contain less total solids in their composition, and the solid matters are, as a rule, practically free from the carbonated alkali. On comparing the analyses tabulated of the American artesian and lake waters used for irrigation (*Vide Appendix D 2*), it will be observed that the waters from the Kern and Tulare Lakes contain a large proportion of carbonated alkali and other salts. The carbonated alkali varies from 16 to 77 grains per Imperial gallon, the other salts from 18 to 138 grains per gallon, while the artesian bore water yields from 3.36 to 23.16 grains per gallon. In looking at the question of the employment of our artesian waters for irrigation purposes it must be borne in mind that the American and Indian soils in the arid districts already contain alkali or "reh," consequently an alkaline water is added to soil which is already alkaline. As far as I have been able to find out, many of our soils in the arid districts are of a good depth, and excepting in a few cases, no sign of alkali has made its appearance in the surface of the soil. Professor Hilgard points out that even the strongest water in the Tulare Lake, near its southern end, is not so strong as to injure the roots with which it comes in contact, so long as it is not concentrated by evaporation. This water yielded 101.328 grains per gallon of total solid matter, of which 33.5 grains per gallon consisted of carbonate of soda, and 45.42 grains per gallon of other salts. We cannot get over the fact that in the Tulare and Kern country, great difficulties have been experienced in the treatment of these soils, which appear to be due largely to the alkali already contained in the soil in a soluble state. The fact also has been considered that in the arid districts, no other water is available for irrigation, there being a large amount of surplus water over and above that required for watering travelling stock. The water has been used on experimental stations, and it has been found that by irrigation it is possible to grow root and forage plants; it is, however, in after years that any difficulty may arise, if care is not taken that the soil is not saturated with these alkaline salts. If the water is carefully used, the soil properly prepared, and deep drainage given, with occasional leachings, combined with the use of gypsum, and the crops carefully selected, the waters, a list of which are given [*Appendix D 1*], can be used.

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1523. Of the forty-one bores you have mentioned you think the water from one-third of that number should not be used for irrigation, at any rate not for the present? I should not like to speak with certainty about the water marked doubtful.

1524. But in the remaining cases you regard the water as suitable? Yes; some time ago I wrote to America to ascertain from the United States Geological Survey Department if they could tell me the limit of salts which unfitted water for use for irrigation purposes. The reply I received to my inquiry was as follows:—

No systematic examination has been made of waters used for irrigation. Owing to the necessities of the case, all waters available are tried even to those which are almost of the character of very weak brines. Of course a great deal depends on the character of the soil and the cultivation, one man apparently succeeding where another man "burns" his crop. I do not think that the limit as regards alkaline contents has as yet been ascertained by chemical analysis. As you are doubtless aware, pure waters are not considered as valuable for irrigation as muddy waters. The presence of fine silt in the water is commonly supposed to indicate the absence of alkaline salts in notable quantities, and thus the muddy waters are valued, not only for the fine silt which they carry, but also for the absence of injurious earthy salts. I have seen, however, in places where no other water could be had the farmers using a clear water, decidedly alkaline to the taste, and one which, in the long run, must be destructive to plant life. When the salty crust has accumulated on the surface, however, so as to be perceptible to the eye or taste, the farmers give the soil a thorough washing, and in Utah, for example, plant the fields to the rank woody white clover which seems to thrive where the more valuable forage plants will not. Analyses of the waters of some of the principal rivers of California are given by Professor E. W. Hilgard, University of California, Berkeley, Cal., in the volume on Cotton production of the 10th census of the United States, and doubtless by correspondence with him other analyses could be obtained.

1525. Then the only way in which a definite opinion can be formed of the real value of our artesian water for irrigation is by practical experiments? To a certain extent, though the water from many of the bores could, without doubt, be used without ill-effect, if ordinary care were taken.

1526. You emphasise the fact that, while in America in a number of cases the application of water containing soda to the land increases and augments the quantity already in the soil, in most cases in this colony there is in the first instance no soda in the soil? Yes; our artesian waters certainly contain a fair amount of alkali; but so far as I have been able to learn, the soil does not appear to contain alkali in any quantity. In India and America, however, they are in many places dealing with soils already alkaline.

1527. *Mr. Wright.*] You have spoken of the farmers in America washing the alkali out of their land. How can they do that if they have nothing but alkaline water to use? They go in for underground drainage. They occasionally leach with artesian water, and then flood the alkali out, which would show as a white or dark deposit on the surface of the land.

1528. *Chairman.*] Would it be a wise thing to allow artesian water in any quantity to find its way into the bed of the Darling? Without doubt, no. I have one other statement which I should like to make,

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and that is in regard to the total solid matter in the water of some of our rivers. With regard to those numbered 1 to 14, I got the information from Mr. Hamlet, the Government Analyst. The statement is as follows:—

Total solid matter present in river waters, &c., New South Wales.

	Grains per Imperial Gallon.
1. Macintyre River (Inverell water)...	21.28
2. Moree Creek	15.00
3. Namoi River	26.00
4. Apsley River (Walcha)	12.04
5. Murrumbidgee River at Wagga Wagga	7.42
6. Wingecarribee River	6.02
7. Wollondilly River (Goulburn)	30.80
8. Bega River	17.36
9. Billabong Creek (Parkes)	18.48
10. Hawkins' Gully (Tenterfield Water Supply)	15.54
11. Middle Creek (Inverell Water Supply)	14.00
12. Dumaresq Creek (Armidale Water Supply)	10.08
13. Castlereagh River	15.96
14. Hawkesbury River (where supply for Richmond will be taken)	7.56
15. Parramatta River Water (about dam)	12.00
16. Stephen's Creek Water Supply (Broken Hill)	21.42
17. Belabula River, Clifden Run	29.34
18. Fish River (near Jenolan Caves)	7 to 10

NOTE:—From 1 to 14 are obtained from analysis made by Mr. W. M. Hamlet, F.C.S., &c.

1529. The water in a creek is influenced by the character of the watershed from which it comes? Yes.
1530. Water coming from sandstone country would be different from water coming from basaltic or limestone country? Yes, certainly.
1531. Referring to the list you have just read, which of those rivers obtains its water from country most like the Darling country—Stephen's Creek? I do not think any of them obtain their water from similar country.
1532. How do these waters compare with the artesian waters? The quantity of solid matter is less, and there is not so much carbonate of soda in them; in fact, if there is any at all, it is only one or two grains per gallon. The greatest amount of solid matter present is in the Wollondilly at Goulburn, where the water contains 30.80 grains of solid matter to the Imperial gallon.
1533. But not deleterious solid matter? No.
1534. How much solid matter does the Murrumbidgee contain? 7.42 grains to the gallon.
1535. Is not some of our artesian water valuable because of the amount of potash it contains? Yes.
1536. So that while the carbonate of soda is bad for plant life, the potash contained in the water is good for it? Yes, but while the potash is present in the form of carbonate of potash, it is as deleterious as the carbonate of soda. It is, however, altered by the action of gypsum, and then becomes of great value to the soil.

James William Boulton, Esq., Superintendent of Public Watering Places and Artesian Water Supply, Department of Mines, sworn, and further examined:—

J. W. Boulton, Esq.  
4 June, 1896

1537. *Chairman.*] You have a statement to make in regard to various matters which were brought under your attention by the Committee when you were last before us? Yes. In the first place I was asked to obtain a comparison of the rainfall at Bourke and at Mildura. I have not been able to obtain a record of the rainfall at Mildura, nor of the rainfall at Wentworth, which is close to it; but I find that the rainfall at Lake Victoria is 11.47 inches per annum, and at Avoca 11.40 inches per annum. Those places are very close to Wentworth, and their rainfall might be taken as a fair guide to the rainfall in the district. The rainfall at Bourke is 16.27 inches per annum.
1538. Then the rainfall at Mildura would be about 11 inches per annum? Yes. I was also asked to obtain, if possible, a comparison between crops grown upon land naturally watered and crops grown upon irrigated land. The following comparison is compiled from the *Statistical Register* and from Colonel Hinton's report, and shows a larger yield of certain crops upon irrigated land.

Average yield per acre under natural rainfall of produce, specified hereunder, in New South Wales.

Crop.	Average yield.	Season.	Crop.	Average yield.	Season.
	bushels.			tons.	
Wheat	10.9 per acre	1894 and 1895	Onions	2.08 per acre	1894, 1895
Maize	27.0 "	"	Turnips	5.1 "	"
Barley	17.2 "	"	Mangold Wurzel	7.3 "	"
Oats	18.4 "	"	Sugar cane	18.6 "	1895
Other grain—			Tobacco	11.4 "	"
Rye	15.2 "	"	Grapes (table)	2 "	"
Millet	11.2 "	"	Oranges	940 dozen per acre	"
	tons.		Lemons*		
Hay	1.10 per acre	1895	Peas and beans	3 bushels per acre	1894, 1895
Straw			Pumpkins	3.6 tons per acre	1894 and 1895
Green food	2.2 per acre	"	Melons		
Potatoes	2.83 "	"			

\* NOTE.—It is estimated that over 3,000 dozen of fruit to the acre can be obtained from fair sized trees in full bear

Hinton's report, page 115, shows the increased yield of certain crops on irrigated land. Corn average yield without irrigation, 25 bushels, yield with irrigation, 1888, 75 bushels; 1889, 66; 1890, 40. Seed cotton, pounds, 200 to 500 without, with irrigation, 1888, 2,200; 1889, 3,000; 1894, 4,000. These results obtained on same land. I should also like to read the following extract from the *Western Herald*, of Wednesday, 3rd June, 1893, which refers to an exhibition in the Bourke show of products grown at the Pera settlement:—

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It appears there was no entry in the class for the best collection of agricultural produce, but there really was the best show in this line that has ever been seen on the Bourke show ground. We refer to the magnificent exhibits from Pera Bore. In the grandstand pavillion the very first exhibit encountered upon entering at the northern door, was that of Pera Bore settlers. Although not assuming vast proportions, the exhibit was beautifully arranged, and covered a deal of ground in the way of variety. The members of the settlement who exhibited were Messrs. Andrews, Betteridge, D'Apice, E. C. Millen, Muuro and Pullbrook. The exhibits were composed of sorghum—early amber cane, sorghum saccharatum or black-seeded sorghum, planter's friend, red Kaffir corn, white Kaffir corn, and teosinte (a single stool.) Vegetables—cabbage, carrots, round and long red beets, radishes, turnips, white and Swede; tomatoes, the largest we have ever seen; Canadian wonder French beans, and Yosemite wax beans. Early rose potatoes; three pumpkins, king of mammoth, crown, and sunbeam; pie melon, citron melon, and red-seeded melon for preserving; ice cream water melon and green fleshed rock melon (a keeping variety which may be stored until winter or even the following spring). Mango melon or vegetable peach; custard squash; also two varieties of cow pea, whip-poor-will and white or edible; Japanese buck wheat and long red mangold wurtzel. This exhibit was undoubtedly a very fine one, and the Pera Bore settlers are to be warmly congratulated upon their enterprise, and more especially upon the perfection of growth attained. It must not be forgotten that the settlers have had very considerable difficulties to overcome, and it augurs well for the future success of the colony that the settlers themselves are working so harmoniously together, and join hands in showing the public what their combined energies have accomplished. In another pavilion were exhibits from the Government farm at Pera, and also from the Hawkesbury Government farm. These were very attractive and nicely arranged, the produce exhibited being as follows:—Ensilage (made from sorghum), Kaffir corn in seed, second crop and sacked; early amber cane, planter's friend, lucerne (green, baled); lucerne (chaffed); broom millet, carrying seed and threshed; brooms manufactured from the millet grown on the farm; cow pea vines, cow pea vines (chaffed); black and clay-coloured cow peas. Vegetables—Swede, Munich, and Nepal turnips; French beans, red beets, mangold wurtzel, pie and citron melons, cucumbers, marrows. Fruit, jams, &c.: Rosella fruit, wine, jam and jelly; pie-melon jam; vegetable marrow preserved; citron melon preserved. The presence of this produce at the show proves that those who were in charge of the Pera Government farm at its initiation did excellent work, and we can only sincerely regret the fact that the late Mr. D. C. Macdougall did not survive to see the result of his labour, as it was presented to the public at the late show. Of course we do not detract from the work performed by Mr. Jefferson since he has been in charge; there is no doubt that he knows his business, and is doing it, and next year we hope to see an exhibit of farm produce second to none in any show in the colony, and feel satisfied that our hope will be verified.

With regard to a question asked at the end of the last meeting, we have at the present time completed by the Department so far as the work of boring is concerned, forty-six wells, seventeen of which are leased under the provisions of the Public Watering Places Act of 1884, ten are in the hands of caretakers, and the balance pending erection of pumping appliances and completion of works and dedication of the land, no caretaker is employed. Twenty-nine of these wells are flowing wells, four are failures, and thirteen are sub-artesian, that is the supply does not overflow the surface. Several of the bores now in progress which are not included in the list submitted are flowing wells. The conditions of lease are that the tenant has the right to use the surplus water over and above public requirements, no restriction being made in regard to the purposes to which it may be applied, an area of 640 acres is fenced in and set apart as a tenant's lease. The tenant may retain the charges which are fixed by regulation for the sale of water to stock. The leases are offered by public tender. The tenant is required to put at least four acres under irrigation, and if required, to reserve a small area of land upon which he can grow such experimental crops as the Department may desire. The period of lease is five years and is limited by the Act. So far seventeen bores are leased under these conditions. At certain of the bores, for instance at Pera, the land has been subdivided into 20-acre blocks, which are offered with a supply of water for irrigation under the Homestead Selection provisions of the Crown Lands Act, and under the special conditions hereto attached and at a rental of £5 per block per annum. Eleven blocks have been selected. An area also is reserved by the Department for experimental work. At another bore, Moongulla, four blocks have been leased under the Public Watering Places Act on the same monetary terms as at Pera, and arrangements have been made for supplying the neighbouring homestead lessees (four) with water for stock purposes. At Dungle Ridge Bore the same proceeding has been initiated. The bores open and available for lease have been regularly advertised in the *Government Gazette* and local papers. They have been undertaken primarily for the supply of water for travelling stock purposes, the question of irrigation from them in the first instance and in regard to the earlier bores being unconsidered. Attention is now being given to this phase of the question under the Minister's direction. The isolated positions of many of them and their great distance from any commercial centre, and the absence of inclination on the part of the population, generally used to pastoral pursuits, and an ill-defined fear as to the unsuitableness of the water for irrigation, and a lack of knowledge as to its application and insufficient tenure, have all been causes which have militated against the leasing of the bores with a successful financial result; the result has been that we are receiving rentals based upon the probable receipts for watering stock, the irrigation value of the water being unrecognised except in a general way. The necessity for some practical demonstration which would, it was hoped, efficiently provide for the use of the surplus water over and above public requirements, led to the establishment of the Native Dog Farm which, upon the successful completion of the Pera Bore, was owing to its distance from Bourke abandoned as an experimental station and was leased. The prejudices and lack of knowledge which I have referred to, I think in some measure have also interfered with the progress of settlement at Pera. The whole district is now, I may say, standing aloof watching the result. Of that I have the most sanguine anticipations, and when once the possibility of a return such as I anticipate, and which should be easily attainable under such favourable conditions as are offered is demonstrated, the problem is to a large extent solved. Cereals, their by-products and fodder, comprising oats, wheat, bran, pollard, maize, chaff, straw, hay, &c., sorghum, Kaffir corn, lucerne, potatoes, onions, pumpkins, &c., melons, cucumbers, besides the whole range of vegetables, tomatoes and small fruit can be grown. Viticulture for the production of raisins, currants, grapes, &c., the latter and melon fruits which can be landed six weeks or 2 months earlier in Sydney than from any other sources, should afford a considerable revenue. The cultivation of oranges, lemons, olives, and such as apples, pears, stone and other fruits, apricots, peaches, &c., for canning and drying, should be abundantly profitable. The cultivation of the broom millet can be made a profitable source of revenue as I have already shown. The local market in Bourke is far larger than is generally known, and through the

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the courtesy of Messrs. Rich and Company I have been furnished with the following summary of the firm's consumption, for 1894 and 1895, of the products I have mentioned, and I have added the Sydney market prices for the same on yesterday's quotations:—

products.	1894.	1895.	Sydney Market Rates.	Amount. 1895 Consumption.
	tons.	tons.	£ s. d.	£ s. d.
Oats <sup>o</sup> .....	260	260	0 2 6 per bus.	1,820 0 0
Wheat* .....	50	50	0 4 0 "	370 0 0
Bran* .....	80	100	0 0 9 "	700 17 6
Pollard <sup>2</sup> .....	150	70	0 0 9 "	291 7 6
Flour <sup>o</sup> .....	1,200	1,100	10 10 0 per ton	11,550 0 0
Maize .....	60	600	0 2 6 per bus.	3,000 0 0
Chaff .....	600	2,100	5 0 0 per ton	10,500 0 0
Straw .....	60	70	3 10 0 "	245 0 0
Hay .....	50	75	5 0 0 "	375 0 0
Potatoes .....	250	270	3 0 0 "	810 0 0
Pumpkins .....	30	30	0 0 8 per doz.	.....
Onions .....	30	24	7 0 0 per ton	168 0 0
Barley (no record) .....	.....	.....	.....	.....
Dried Peas (no record) .....	.....	.....	.....	.....
				£20,920 5 0

\* Oats, wheat, bran, pollard, and flour from Sydney to Bourke go at A rates, viz., 35s. 4d. per ton + 20 per cent., now equal to 42s. 5d. per ton; for the other products a net rate of 35s. 4d. is charged.

From Bourke to Sydney the rate is 14s. 9d. for 6-ton loads, for less, 20 per cent. is added. Chaff, straw, and hay, Sydney to Bourke, in 6-ton loads, £3 17s. per truck, or lesser quantities £1 15s. 4d. per ton. The following products were also consumed by the same firm on the average of the preceding three years:—

Fruits.	Quantity.	Sydney Market Rates.	Amount. 1895 Consumption.
			£ s. d.
Dried apples .....	1,400 lb.	6d. per lb.	350 0 0
Dried apricots .....	3,000 "	7d. "	87 10 0
Currants .....	60,000 "	4½d. "	1,000 0 0
Raisins .....	40,000 "	4½d. "	750 0 0
Canned fruits .....	5,500 "	7s. per doz.	80 0 0
Jams .....	35,000 "	3s. 6d. to 6s. per doz.	692 11 0
Honey .....	4,000 "	3d. per lb.	50 0 0
Brooms .....	200 doz.	9s. to 18s. per doz.	135 0 0
Dried pears .....	No record.	5d. per lb.	.....
Dried peaches .....	"	5d. "	.....
Dried cherries .....	"	6d. "	.....
Bottled fruit .....	"	7s. per doz.	.....
			£3,145 11 0

The two amounts £20,920 5s., and £3,145 11s., thus give a grand total of £24,065 16s.

To these prices may be added freight from Sydney to Bourke (3rd class rates) at £11 5s. 4d. per ton for single tons, in 6-ton loads £7 10s. per ton; return rates are the same for dried apricots, canned fruits, and jams. Currants, raisins, dried apples go under 2nd class rates, £8 1s. 9d. per ton for single tons. Honey is carried at £3 1s. 9d. per ton, or £6 9s. 11d. per ton for smaller lots. For comparison with these rates, I am informed by Colonel Bell that American freight rates may be taken generally as a quarter less than in New South Wales. This return simply represents the consumption of one firm who, in forwarding it, state "our firm intends erecting flour-mills at Bourke when the wheat production warrants it; we consider it within the realm of practicability." This return does not touch upon the consumption of vegetables in Bourke. In additions to this there would be a limited market at Byrock, the whole of the vegetables for which town are grown on the Bogan, at Gongolgon, by Chinamen, and are carted 37 miles by road to Byrock. So much for the local demand which would tax the resources of more than one settlement like Pera. In addition to the direct local market, the following return prepared from Coghlan's Statistical Register, 1894, shows there is a large home consumption of these products:—

Imports of 1894.		Value.	Value.
Fruits (green) .....	£98,416	Pickles and sauces .....	£41,401
" (dried) .....	11,701	Preserves (includes canned fruit, ginger, &c.) ...	9,124
Almonds, nuts, &c. ....	7,732	Spices .....	6,719
Dates .....	8,155	Tobacco (unmanufactured), not including cigars	
Rice .....	67,745	and cigarettes .....	16,535
Potatoes .....	96,421	" (manufactured) .....	76,441
Jams and jellies .....	10,744	Vegetables .....	15,822
Linsced .....	2,911	" (preserved) .....	3,223
Mustard .....	24,561	Maize .....	6,601
Linseed oil .....	35,255	Hay and chaff .....	108,999
Olive oil .....	2,257	Currants and raisins .....	42,150
Salad oil .....	5,657		
Onions .....	28,700	Total .....	£727,270

The question of irrigation of large areas of lucerne for stock fattening and of products for hog raising must not be lost sight of. Californian and Mexican stock-raisers have recognised that with irrigation of lucerne they can increase the carrying capacity of their ranches by 20 per cent. One canal in Fresno County, California, 30 miles in length—the Chowchilla canal—is used solely for irrigating natural grasses. The area of irrigated land in America under lucerne is very large, and is stated to carry ten to twenty sheep to the acre if cut for them, and 8 to 10 tons per acre is a common yield. The present Sydney market rate for this is 50s. a ton. I have found it a matter of considerable difficulty to compile the information regarding American conditions and cost of water in comparison with those offered here.

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The American soils are, I think, speaking in a general way, of a much lower grade and more difficult to treat than our western soils. The soils of the Western American States are poor, and frequently calcareous and alkaline, but upon them are raised grain, lucerne, and fruit. Upon the mesas or higher table-lands heavier loam is found and better results obtained. The table given shows the products from the more representative irrigating States—Colorado, California, New Mexico, and Utah. On reference to it it will be seen that the cost of water to the user varies much, but is generally higher even than the rate charged by us for land and water combined. I find that at Riverside the cost of water is 12s. per cubic foot per second for twenty-four hours. At Pera our rate is about 7s. for the same right, but it includes in addition rent for the land. Labour, as far as I can ascertain, is about the same as here, viz., general labour, from 6s. to 8s. per diem; farm labourers, £50 to £80 per annum; artisans, from 10s. to 16s. per diem (D Report, p. 16). I am of opinion that there is distinctly room for more settlements of the Pera class in the neighbourhood of the western centres of population, where the land carriage is not high, and where communication either by rail or river is available to the seaboard or metropolitan markets. The bores at Moree and at Walgett, Wanaaring, Coonamble, &c., afford facilities, and I have no doubt but that they will form a nucleus for further extension. The water can be applied to the land without great expense, and the work could be done far cheaper on a larger scale on a system of grouping the wells as at Riverside. The cost of land transport for the weighty plants for long distances helps in a great degree to keep up the present high price of boring. The fluming which delivers the water direct to the settler at Pera has been erected at a cost for 8,072 feet of £807, or somewhere near 2s. a foot. The products I have mentioned as consumed in Bourke can be grown generally locally by irrigation at a large profit; the dried fruits, canned fruits, and expensive articles, such as asparagus and strawberries, broom millet, all seem to me to be capable of production at such rates as will render the men independent and comfortable. The erection of works for fruit-drying does not appear to me a necessity; the climate is sufficient to do all that is required. Low sheds for stacking the trays at night or in rain would be required, but they need be no expensive adjunct. I have already quoted a letter showing the cost for irrigated land at Mildura, and the *Gazette* notice herewith shows the prices charged at Pera. The difference is large, and I am more than hopeful that as our experiments at Pera mature, and the market becomes known, settlement will proceed. We only require skill and care in the use of the water, and a certain amount of encouragement and education to the struggling settlers at Pera, to make a success of an experiment initiated under the most difficult and unfavourable conditions to imagine. The experiment is, I may say, simply touching the fringe of the subject. The following is an extract from the *Government Gazette* giving the conditions under which land can be leased at the Pera Settlement:—

Department of Lands, Sydney, 13 July, 1895.

NOTIFICATION SETTING APART CROWN LANDS FOR HOMESTEAD SELECTIONS.

His Excellency the Lieutenant-Governor, with the advice of the Executive Council, directs it to be notified that, in pursuance of the provisions of the 10th and 13th sections of the Crown Lands Act of 1895, the Crown Lands comprised within the blocks hereunder mentioned are hereby set apart for Homestead Selections, and shall be disposed of under the provisions of the 13th and following sections of the said Act.

It is further notified that, in pursuance of the provisions of sections 13 of the Crown Lands Act of 1895, the under-mentioned blocks of land will be available for Homestead Selection on and after 15th August next, subject to the general provisions of that Act, and to the following special conditions:—

The Crown to deliver water for irrigation purposes on each block at such times as may be arranged in the proportion of 21,000 gallons per block daily, but the total supply on any one day not to exceed the proportion for thirty days nor the capacity of the distributing channels, nor the supply available from the bore.

At least 4 acres of each block to be cleared and 2 acres cultivated during the first year after confirmation, and the whole block to be cleared and 10 acres cultivated within five years from that date, and subsequently maintained in cultivation.

Each block to be fenced with a substantial post and wire fence within twelve months after confirmation.

Each block to be kept free from rabbits, Bathurst burr, and other noxious animals and weeds.

An annual return to be supplied to the Crown as to the growth and yield of produce.

All flumes, earthworks, &c., in connection with the supply of water from the bore, and also the rabbit-proof ring fence, to remain the property of the Crown, and each selector to be liable for any damage caused to the same by his default.

The right of entry for repairs is reserved, also the right of way without compensation for all main distributing channels. The right is reserved to refuse to supply water to isolated blocks.

Selectors will be allowed to water their stock at the Public Watering Place at half the usual rates, and to purchase nursery stock, vine cuttings, seeds, and trees from the Crown at current market rates.

J. H. CARRUTHERS.

LAND DISTRICT OF BOURKE.

County.	Parish.	Portions comprised in block.	Area of block.			Value of improvements (if any).	Nearest town, and distance therefrom.	Character of land, soil, timber, &c.	Water supply.	Capital value.		Annual rent at 1½ per cent.		Survey fee.				
			a.	r.	p.					£	s.	d.	£	s.	d.	£	s.	d.
Gunderbooka...	Paka	* 6	20	0	0	11 13 4	Bourke, distant 9½ miles from centre of the whole block.	Level throughout; rich, red arable loam, sandy, of high producing quality; timbered with gidgee, mulla, beef-wood, iron-wood, leopard-wood, and box, and interspersed with small, light scrub.	Artesian	400	0	0	0	0	2	5	0	
Do	do...	* 7	20	0	0	11 13 4				400	0	0	0	0	2	5	0	
Do	do...	* 8	20	0	0	11 13 4				400	0	0	0	0	0	2	5	0
Do	do...	* 9	20	0	0	11 13 4				400	0	0	0	0	0	2	5	0
Do	do...	*10	20	0	0	11 13 4				400	0	0	0	0	0	2	5	0
Do	do...	*11	20	0	0	Nil.				400	0	0	0	0	0	2	5	0
Do	do...	*12	20	0	0	Nil.				400	0	0	0	0	0	2	5	0
Do	do...	*13	20	0	0	Nil.				400	0	0	0	0	0	2	5	0
Do	do...	*14	20	0	0	Nil.				400	0	0	0	0	0	2	5	0
Do	do...	*15	20	0	0	Nil.				400	0	0	0	0	0	2	5	0
Do	do...	*16	24	0	0	10 9 7				400	0	0	0	0	0	2	8	9
Do	do...	17	20	0	0	Nil.				400	0	0	0	0	0	2	5	0
Do	do...	18	20	0	0	Nil.				400	0	0	0	0	0	2	5	0
Do	do...	19	20	0	0	Nil.				400	0	0	0	0	0	2	5	0
Do	do...	20	20	0	0	Nil.				400	0	0	0	0	0	2	5	0
Do	do...	21	24	0	20	15 6 9				400	0	0	0	0	0	2	8	9
Do	do...	22	20	0	0	Nil.				400	0	0	0	0	0	2	5	0
Do	do...	23	20	0	0	Nil.				400	0	0	0	0	0	2	5	0
Do	do...	24	20	0	0	Nil.				400	0	0	0	0	0	2	5	0
Do	do...	25	20	0	0	Nil.				400	0	0	0	0	0	2	5	0

NOTE.—The blocks marked with an asterisk are leased

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On and after the date above-mentioned, application for the above blocks may be made to, and lodged with, the local Crown Lands Agent. The application must be accompanied by half a year's rent in advance, and a survey fee as above specified; or if the applicant desires to defer the payment of the survey fee, then by one-third of the total amount thereof. For homestead selections without residence before grant, the annual rent, until issue of the grant, shall be three and one-half per centum of the capital value, and the full amount of the survey fee will have to be paid with the application. [Ms. 95-5,424 Dep.]

I also hand in a return showing the value and the yield of crops grown in America by means of irrigation, the area of land irrigated, the cost of the water per acre to the user, and the cost of maintenance per acre to the user. [*Vide Appendix.*] The counties I have chosen are, I think, typical of the different American soils. The analyses of the Coonamble Bore water and the Bourbah Bore water, which you have not yet had, are as follows:—

<i>Coonamble Bore.</i>		<i>Bourbah Bore.</i>	
Depth 1,020 feet. Total solid residue dried at 220° Fahr.,		Sodium carb. . . . .	23.36 grains per gal.
5,306 grains per gallon.		Silica . . . . .	1.26 " "
Composition of the dissolved solids.		Calcium carb. . . . .	1.12 " "
Sodium chloride . . . . .	6.91 grains per gal.	Sodium chloride . . . . .	2.96 " "
Do carbonate . . . . .	40.00 " "	Potassium . . . . .	trace
Calcium . . . . .	1.12 " "	Magnesium carb. . . . .	0.84 " "
Chlorine as chlorides . . . . .	4.20 " "	Loss on ignition . . . . .	1.96 " "
Nitrogen as nitrates . . . . .	traces		
Total solids (dried at 220° Fahr.) . . . . .	53.06 " "	Total solid residue . . . . .	31.50 " "

1539. *Mr. Humphery.*] Has any land been cultivated by the use of that water? No.

1540. Is it the opinion of the Department that the water is unsuitable for use? No; I should not be afraid to use water having as much sodium carbonate as 45 grains to the gallon.

1541. *Mr. Lee.*] You are specially charged with the management of the artesian water supply of the colony, and appear to have taken a very large and wide view of the possibilities of cultivation by the use of that water. I take it that the object of your evidence has been to show the Committee what can be done by the proper application of artesian water, and to show us further that we have, in this colony, artesian water which is suitable for irrigation. I should therefore like to know what are the actual results which have been obtained here. Taking the Pera Bore as an example—because there appears to have been more cultivation done in the neighbourhood of that bore than in anywhere else;—we are told that it has a flow of 610,000 gallons per diem;—how many acres of land would that quantity of water irrigate? We have calculated that it will irrigate the whole of the Government farm—which comprises 57 acres—and 10 acres out of each 20-acre block. That is 237 acres in all.

1542. That bore cost £1,487 17s. 8d., the interest upon which amount, at 4 per cent. per annum, would be £59 10s. We have been told that the revenue derived is £87 12s. per annum,—does that include the £5 derivable from those who take up blocks? Yes.

1543. That £5 goes to the credit of the Lands Department? Yes.

1544. I presume that the Government farm pays no revenue? No.

1545. The amount derived from the twenty blocks at £5 each would be £100? Yes; but only eleven blocks have been leased.

1546. Then how do you make up the balance of £32 12s.? That is the amount derived from water supplied to travelling stock.

1547. The yearly expenditure in connection with the bore is £466 3s.? Yes, including the wages of the manager of the farm and three assistants.

1548. If there were no Government farm at Pera, and the water were required for irrigation purposes, how many men would it take to attend to the bore? One.

1549. At what wage? Six shillings a day—about £104 a year. It must be remembered that the revenue derived from artesian water for stock purposes depends entirely upon the season.

1550. I want to ascertain whether irrigation, by means of artesian water, can be made to pay? Well, we are at this disadvantage, that we have no practical experiment to fall back upon, within our own experience, which will give us any figures in evidence of the value of such irrigation. In a year's time we may be in a position to put very convincing figures before you.

1551. If the 57 acres of land now held by the Government contributed towards the revenue at the same rate as the other blocks, what amount would you derive from them? A little over £10 a year.

1552. So that if the bore were under the management of one man, it would cost the Department £104 a year, and would return a yearly revenue of £65? Yes; if no more blocks were leased.

1553. How would it be possible, under such conditions, to extend the system of irrigation with artesian water? I think it would be found that if the system could be carried out on a larger scale the bores could be made more cheaply. If we had a series of wells, grouped so that a larger area of land could be irrigated, we could get the bores put down for 50 per cent. less than what we are paying now.

1554. Do you think that it would be possible, within a few years, to put down these bores more cheaply than they can be put down at the present time? Yes; that agrees with our experience.

1555. But I should like to know how the system can be continued in the future if the country is to get no adequate return for its expenditure? It is not the direct return that we look to so much as the indirect return. The value of an initiatory experiment such as this cannot be calculated upon a cold monetary basis.

1556. It is only fair to say that, although the work may not at the present time give a large direct return to the State, it is having the effect of settling land in a remote part of the colony, and of making cultivation possible where it would not be possible under other conditions? Yes; there is no question about that.

1557. Do you think that the artesian water in this district could be used for the production of almost any kind of crop? For almost every crop.

1558. Do you think that it could be used to grow cereals? There is no question about its being possible to grow wheat with it; but I do not think that wheat would pay to grow there.

1559. Why? American experience shows that it is better to have small holdings with intense cultivation, producing higher-priced products, such as stone fruit, raisins, currants, and so on. The return which I have handed in shows that while wheat will give a profit of from £2 to £6 an acre, fruit has given as much, I think, as £312 per acre.

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1560. Therefore, in that district, attention must be given to the production of fruits suited to the climate and of the highest value? Yes. A great many of the large wheat-ranches in America are now being cut up and disposed of in small holdings.

1561. Is there not another reason why cereals would not pay in the district of which we are speaking? I think the climate would be rather warm for wheat.

1562. Cannot wheat be grown as well in other parts of the country under natural conditions? Yes.

1563. Consequently, it would not pay to grow wheat by means of irrigation? No.

1564. Is it not a well-ascertained fact that wheat-growing will not pay except where large areas are cultivated? Yes.

1565. It would be out of the question to grow cereals in from 10 to 12 acre blocks? Yes. I believe that the growing of lucerne would be a profitable industry there, as it is in America, where it is used especially for fattening beasts.

1566. You look a considerable distance into futurity when considering the usefulness of this work? Yes.

1567. You anticipate that when the population of the colony has trebled itself, there will be a demand for land to which water can be supplied? I think it is more than possible.

1568. The present free selector aims at obtaining as much land as he can possibly get hold of; but upon these irrigation areas men will have to be content to make a living out of the small holdings? Yes.

1569. It would be advantageous to the country to have a large population making its living by the cultivation of small holdings? I think so. That has been the effect in America, according to the experience of irrigation settlements there.

1570. Your return shows there are 17,000,000 acres of irrigated land in America? Yes; I believe that in India they irrigate about 30,000,000 acres.

1571. Do you know in what areas the land is held? I think the holdings are very small, and that very few exceed 640 acres.

1572. Have you any reason to suppose that a series of artesian bores could be put down in close proximity to that part of the Darling which it is now proposed to lock? I think so, on the northern side of the river.

1573. And to what distance from the northern bank? From the northern side of the river almost up to the Queensland border. On the south side of the river we have not had any success with our bores.

1574-5. In other parts of the world irrigation has been done by means of gravitation. If the river is locked as proposed, it may throw the water back to such an extent that a much less severe lift would enable the water to be used for irrigation purposes;—do you consider that whether the Darling is locked or not, the system of obtaining water by means of artesian boring should not be abandoned? Certainly I do.

1576. You think that we shall require the water from both sources? I think that both means of obtaining water can be followed.

1577. Since irrigation by means of river water at any great distance from the banks of the Darling will be practically impossible, there is a great extent of country upon which artesian water may be used to very great advantage? I think so.

1578. *Mr. Hassall.*] The operations necessary for providing artesian supplies are practically in the infancy of their development? Quite so.

1579. You have not had sufficient experience to enable you to estimate correctly the minimum cost of the work, or what return is required to make it satisfactory? No, we cannot do that yet.

1580. You contend that the indirect benefits conferred by the discovery of artesian water more than counterbalance any expenditure incurred in connection with it? I think so.

1581. Has the discovery of artesian water in these outlying localities had the effect of opening up roads which before were impassable in dry weather? Yes, some of the roads were utterly impassable before.

1582. Thus the work has had the effect of attracting to Bourke a great deal of stock which would otherwise never have come there? Yes. This year, for the first time, stock has been moved from Milparinka to Wannaring.

1583. What extent of country will the road to Milparinka open up? It opens up the whole of the south-western corner of Queensland. Before, the direct trend of the traffic from that district was towards Wilcannia or Menindie or Cockburn, and so to South Australia; but I think that the effect of the opening up of the road to Milparinka will be that stock will come down to Tibooburra from the Warri or the Wompah, and turn into Bourke *via* Wannaring, or possibly, instead of going straight to Bourke, it will turn off at the 75-mile bore and go down to Louth, and so to Cobar, Byrock, or to Ginalambone. As you begin to get nearer to Bourke there are alternate roads leading towards the railway line.

1584. With regard to the experimental farm at Pera Bore; do you think that a good return could be obtained by selling the produce raised there to teamsters and others? Yes. I might mention that the settlers are now buying sorghum ensilage from the farm for horse feed.

1585. The Government have not yet decided to cultivate the land in order to obtain produce for sale? No.

1586. The farm is regarded simply as an experimental one? Yes, purely for the education of the people.

1587. If it proves successful is there not an extreme probability that the return obtained for the produce grown there will counterbalance the expenses of management? Yes. The Wagga farm more than pays for itself, and I see no reason why this farm should not do so, especially when we come to get our dried fruits in.

1588. In that district, in dry times, the carriers are compelled to carry feed with them? Yes. They will start out from Bourke with, say, 3 tons of loading and 1 ton of feed. If they could get the feed at the different bores they could carry so much more loading, as they would not require to carry feed.

1589. So that if feed were grown at these bores it would be a help to the carriers and profitable to the people growing it? Yes.

1590. But the whole matter is now in an experimental stage? Yes; though I believe that the possibilities of the western country under irrigation are beyond the wildest dreams of the people out there.

1591. Do you not think that the artesian water could be carried by means of gravitation over the surface of the ground more cheaply than water could be pumped from the river? Yes; you could probably put down a bore for the amount that you would have to pay for 2 or 3 miles of fluming.

1592. Experience goes to prove that irrigation by means of artesian water is as profitable, if not more profitable, than the system of pumping water from a river? Yes, and it competes with America in some degree, with the gravitation scheme.

1593.

J. W.  
Boulton,  
Esq.  
4 June, 1896.

1593. But the artesian bores in the district to which we are referring are not so numerous as to enter into competition with the scheme we are considering? No.
1594. You have no bores along the banks of the river? No.
1595. You are engaged in putting down bores along the principal roads leading into places like Bourke? Yes.
1596. And those operations have had the effect of opening up the country and making traffic possible which was impossible under natural conditions? Yes.
1597. *Mr. Clarke.*] Do you think that the locking of the Darling would be beneficial, apart from the question of irrigation? I should think it would be very advantageous to have an open waterway there.
1598. The scheme, if carried out, would give a good water supply to Bourke and to other places along the river? Naturally, the damming of the river would increase the supply of water.
1599. Is there a good water supply at Bourke at the present time? I believe that water is pumped from the river into a large tank, and is taken from that tank by means of gravitation for the reticulation of the town.
1600. *Mr. Loe.*] You consider that the principal crops that will be grown in that district are lucerne and fruits? Yes, and others I have named.
1601. Chiefly for local requirements? Yes.
1602. Would it pay to irrigate grass lands? I could not offer an opinion upon that point; but I know that it pays to do it in America. They have a canal there over 30 miles long, which is used to convey water for the irrigation of natural grasses; and there is a similar canal in Kern county. They have found that the irrigation of the natural grasses increases the carrying capacity of the country by 30 per cent.
1603. *Chairman.*] What is the depth of the soil at the Pera Bore? I think that it is from 2 feet 7 inches to 4 feet deep there.
1604. What is the nature of the subsoil? There is a calcareous nodular subsoil.
1605. Is there a sufficient depth of soil to meet the requirements of irrigation? The question was gone into, and we considered that the depth was sufficient. At Moree there is nearly 30 feet of beautiful black soil, with a gravel bed underlying it.
1606. Will you ascertain for us the depth of this soil at the various bores and the nature of the subsoil? Yes.
1607. *Mr. Wright.*] Is any irrigation being done at the Moree Bore? No.
1608. Which bore gives the largest discharge? The Euroka Bore, which has a discharge of about 3,000,000 gallons a day.
1609. What area of land would that supply of water irrigate? About 1,400 acres—possibly more.

Walter Scott Campbell, Esq., Chief Clerk, Department of Agriculture, sworn, and examined:—

W. S.  
Campbell,  
Esq.  
4 June, 1896.

1610. *Chairman.*] Has the use of artesian water for irrigation, in this colony, so far been satisfactory? Extremely so.
1611. So much so as to cause you to view the work with favour? Certainly.
1612. Are you prepared to express an opinion as to what will be the eventual result of applying this water to the soil? My idea is that the work will convert the western district into a paradise.
1613. You believe that the eventual result will be satisfactory? Certainly.
1614. What do you think is the future of the country west and north-west of Bourke, if it is irrigated? I think that country will have a magnificent future, and that thousands and even millions of people will be supported there. I think that that district would support a couple of millions of people, and I believe that 20 acres would be quite sufficient for a man and his family to live upon. I think that one point has been overlooked in calculating the distribution of water, and that is that with more cultivation less water would be required than is generally supposed. I heard from Mildura, yesterday, that in some places where they cannot get much water they have been working away with their ploughs and harrows, and they now find that they can do with less water than they at first thought possible. Therefore, I think that the calculations which have been made here are a little beyond the mark, and that the water supply from the artesian bores will irrigate larger areas than is supposed. I think that the people here do not know much about the proper use of the water yet. It was for that reason that I pressed hard for the establishment of an experimental farm at the Pera Bore, and I think we should go on with this work a little more before we encourage settlement too much, though I have no doubt in my own mind that the results will be most satisfactory. Of course we have had the advantage of the experiments which have been made at the Native Dog Bore, and one or two other places with which I have been connected from the beginning. I think that the results so far are very satisfactory, and that the mineral matter in the water will not affect vegetation prejudicially. As a matter of fact these mineral constituents are exceedingly favourable to the growth of some kinds of vegetables—cabbages, turnips, and so on.
1615. Where do you anticipate getting the necessary population. I understand that you have had difficulty in leasing the land at the Pera Bore? Yes, because people are not yet sure about what can be done. We have not been at work there for more than a year, and so have not had time to show them what can be done. I think in another two years the result there will be marvellous.
1616. And that the same thing will happen in our western district that has happened in districts in America formerly regarded as absolutely valueless? Quite so. The growth of population in places such as Southern California, has been wonderful.
1617. Is the country there as sterile as ours? It is frightfully sterile. My son, who was in charge of an 80-acre farm out there, has just returned, and he tells me that the alkali is something dreadful, and that walking over the ground you are covered with white powder. That alkali does not come from the artesian water, but was originally in the soil. In America they irrigate chiefly with water taken from rivers and other natural water courses.
1618. *Mr. Trickett.*] Have you had any experience of irrigation with water taken from the Darling? Not so far as the Department is concerned; but I have seen a great deal of irrigation upon the Darling on small areas which has been very satisfactory.

1619.

1619. Irrigation to what extent? Well, the areas were only small—perhaps half a dozen acres, perhaps 10 acres.

1620. Looking at the character of the soil near the Darling, do you think it would be possible to carry the water from the river for any considerable distance? So far as I remember the land at the back is lower than that immediately upon the banks of the river; but I have no definite knowledge on the subject.

1621. Have you any knowledge with regard to the carrying out of large irrigation works in any country? No; Mildura is the largest irrigation scheme we have in these colonies.

1622. Is it not a fact that before commencing large irrigation works surveys should be taken of the surrounding country, so that it may be seen how the water may be made available? Quite so.

1623. Do you know whether any steps of the kind have been taken in connection with the scheme now before the Committee? I have no knowledge upon the subject.

1624. All the irrigation schemes in this colony are on a very small scale? I believe that Mr. Wills Allen has attempted irrigation upon rather a large scale.

1625. What kind of crops would be likely to be grown between Bourke and Brewarrina, if the land there were irrigated? A great variety of fruits—oranges, apricots, figs, grapes, almonds, and stone fruits.

1626. How does the climate in that district compare with the climate at Mildura? I think they have 4 or 5 inches of rain more at Bourke than at Mildura.

1627. But would the climate there be favourable to the growing and drying of the fruits you have named? Yes.

1628. Is the temperature at Bourke the same as it is at Mildura? I think it is a little higher, and they do not get so many frosts there. I think it would be even more suitable for drying than the Mildura climate.

1629. Can you tell us whether irrigation would be likely to be carried on in order to improve pastoral country? The only objection I can see to it is the cost of pumping, which I think would be pretty considerable.

1630. You think the expense would be a deterrent? Not altogether.

1631. But it would be a considerable item? Yes.

1632. What would a man have to pay per acre for irrigation if he got the water from the Government? That is rather a difficult question to answer. I think that the people at the Pera bore should be able to realise from £15 to £20 an acre profit; but there are so many factors to consider.

1633. You have not gone into the question as to whether it would pay the Government to construct the proposed work? No.

TUESDAY, 9 JUNE, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.  
The Hon. CHARLES JAMES ROBERTS, C.M.G.  
The Hon. WILLIAM JOSEPH TRICKETT.  
HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
JOHN LIONEL FEGAN, Esq.  
THOMAS HENRY HASSALL, Esq.  
GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Cecil West Darley, Esq., Engineer-in-Chief for Public Works, Department of Public Works, sworn, and examined:—

1634. *Chairman.*] You have had an opportunity of seeing the plans before the Committee? Yes; I looked at the plans. C. W. Darley,  
Esq.  
9 June, 1896.

1635. You have previously had the question of locking the Darling under your consideration? I reported upon the subject of locking the Darling between Wentworth and Bourke in 1890, and I have a knowledge of the scheme now proposed.

1636. You have had an opportunity of reading the evidence in reference to this scheme which has been given by the Water Conservation Branch? I saw Mr. McKinney's explanation of his scheme.

1637. The view he takes as to the best way of bringing about the desired result differs from the way you suggested? His scheme is different from the scheme which I proposed six years ago.

1638. *Mr. Lee.*] The proposal is to place a series of locks and weirs in the River Darling at stated intervals between Bourke and Brewarrina;—have you had an opportunity of inquiring into the nature of the proposed works? I have read Mr. McKinney's statement, so that I know what he proposes to do.

1639. The Committee would be glad to have, in the first instance, your opinion upon the proposed method of constructing the weirs? My opinion is that movable weirs are not suitable for a river like the Darling? That is why, after very careful consideration, I proposed the construction of fixed weirs.

1640. What do you bring under the definition of movable weirs? Weirs that fold down or open to allow the water to pass.

1641. Have you seen the model of the shutter proposed to be used by Mr. McKinney? Yes; shutter weirs have been used in other parts of the world, but chiefly in France, on the Seine, where the conditions are very different from the conditions prevailing upon the Darling. The banks of the Seine are comparatively low. Its flood waters only rise 7 or 8 feet. Any higher rise than that would almost go over the banks, and, if the water level were seriously increased, the adjacent country would be flooded with every fresh. Therefore, fixed weirs are not admissible there. On the Darling, however, the summer level of the water is something like 40 feet below the top of the banks, and a weir 10 feet high would not seriously affect the flood waters. Speaking in general terms, the effect of such a weir would be that with every foot of rise in the river a mile above it there would be the rise of an inch upon the weir.

1642. After the water has risen a certain height over the weir, the weir ceases to have any effect upon it? For a certain number of feet the water on the weir will only be lifted about one-twelfth of the height to which

C. W. Darley, Esq., which the river has risen a mile above the weir. When the water going over the weir reaches a certain height the water below the weir rises to the same level, and the weir becomes what is termed "drowned." If the water were 6 or 7 feet above the weir, the weir would not affect the surface. Taking an average section I estimated that a weir in the Darling 10 feet above summer level would only raise the maximum flood-water above the weir about  $1\frac{1}{2}$  inch.

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1643. You are strongly of opinion that it would be inadvisable to adopt a movable weir? In my opinion, a movable weir of any form is open to many grave objections in a scheme of this kind. The first cost is only a portion of the ultimate cost, because it will require a considerable staff of men—it is very hard to say how many, but certainly not less than four—to manage the weir. With a flood coming down you could not send men long distances to attend to the weir. You must have them upon the spot.

1644. What would be the probable effect of floating timber and debris upon these movable shutters? I think that timber would cause a considerable amount of injury. That is the recorded experience of other countries. The shutters are always liable to be damaged by floating material coming down the river.

1645. Is there much floating material coming down the Darling at flood time? At times there is a good deal of drift-wood coming down.

1646. If the shutters of a movable weir were struck by drift-wood they might either be fractured or displaced? They would be left in an unworkable condition.

1647. You think that the shutters would be liable to injury? There would be a very great liability to injury from drift-wood.

1648. And if they were injured it would be a most difficult matter to replace them, and at the same time conserve the water in the river? Of course you could not repair the shutters until the water had fallen to a low level, and thus you would lose a great deal of water. You cannot conserve water very well in weirs of this kind, because you cannot make the shutters tight. These weirs would run dry in a very few months.

1649. Why? The shutters are only about 3 feet wide, and you must have a space between each shutter to enable you to work them.

1650. So that the leakage would be very great? It would be very serious indeed. The leakage would be more than the river was carrying. I do not think the shutters would hold up the water at all. On the Seine they had the shutters 4 inches apart, but there was so large a flow through that they narrowed the space down to 2 inches, which was as little as they thought safe. I find that a weir, such as is proposed by Mr. McKinney, if fixed with spaces of 2 inches between the shutters, would lose 160,000,000 gallons a day. Possibly smaller spaces between the shutters would be sufficient, but they have not attempted to adopt smaller spaces upon the Seine.

1651. Would it be possible to construct these shutters with an overlap? No; movable weirs are constructed in the old country where there is no great rise of flood water, but I can show you the statements of very eminent engineers which go to prove that they should not be constructed unless you are able to have an overhead bridge from which to work them. They are now giving up these shutters, and are adopting what is known as the roller or curtain shutter, which rolls up on to the bridge. When the curtain is rolled down, the weir is comparatively water-tight. I think, however, that an overhead bridge would be altogether inadmissible upon the Darling.

1652. It would be impossible? Yes. In every case where these shutters have been a success it is in places where they have been able to erect a bridge above the flood level, and where the maximum flood level is 6 or 8 feet above summer level. I do not know of a case where they have been successfully used in a river rising occasionally 20 or 30 feet above summer level.

1653. Can you quote any authority to support your testimony? This is what Professor Gaudard, a French engineer who has had much experience upon the Seine, says upon the subject:—

For weirs frequently raised and lowered a footway was generally adopted; now, from the moment that it existed and could render support to the needles, this simple attachment, sufficient for small heights, supplanted the Chanoine shutters. These shutters were still appropriate for navigable passes, but when their height exceeded 10 feet, it was advisable to replace the winch barge by a movable footway, and hence arose the question of seeking to use the frames (Fermettes) as supports for the wall at the dam, and so dispensing with the props and trestles of the Chanoine system. This was what had been done by Messrs Boulé and Caméré; the needles being found too heavy, these engineers had substituted the more easily managed curtains, constituting formidable competition with the older shutters. The Tavernier system, with an upper fixed bridge, was more ambitious than those with the movable footways. It had been recommended for the Rhone, by Mr. Pasqueau, on account of the stones and gravel brought down by that river, impeding the lowering of the frames on the bed. This type of weir, in fact, did not allow of any delicate parts lying on the river bed.

Mr. L. B. Wells, in discussing the paper from which the above extract is taken, said:—

The author had, in 1880, questioned Mr. Wells' view of the trustworthiness of the French movable weirs; but seeing that French engineers were still altering their type, he felt certain there must be some good cause for dissatisfaction. The reports in 1873, by Messrs. W. Forsyth and W. R. Manning, M.I.C.E., to the Board of Public Works in Ireland, dealt with the needle weir, the water pressure weir, the pontoon-barrage, the drum weir, and the shutter weir, each of the systems being in use. The author stated that shutters had given place to needles, and needles to curtains, while now the need was acknowledged of a fixed overhead bridge for working the weir, to which the frames were hinged, not at the bottom of the river, as in the older weirs. The latter type commended itself to him; still the grave objection of a multiplicity of parts remained. These, he thought, would be liable to derangement, to damage by floating bodies, and to become unworkable during frost.

Mr. F. G. N. Stoney, who introduced one of the best forms of lifting weirs that has yet been introduced, says:—

Whatever form of movable weir was used, it should not shut into the water, nor down on the bed of the river when open.

Mr. Caméré, speaking of a weir put up at Pose, says:—

Its working had left nothing to be desired, and it had proved one thing that deserved to be recorded, namely, that no system of weir with parts lowered on the bed of the river, could have been capable of satisfactory working under such conditions as had occurred at Pose. In this case the quantity of debris of all descriptions—grass, branches, snags, whole trees brought down and arrested by the dam—was such as would have rendered almost impossible the working of any weir whose main parts were under water, especially as regards the frames.

The whole tendency is to discard weirs that drop into the water, and to adopt weirs drawing up to an overhead bridge. I found it very hard to get the opinion of engineers who have had charge of these works, and also to get a statement as to the number of men required to work the movable weirs. I find, however, in volume 60 of the Minutes of Proceedings of the Institution of Civil Engineers, that Mr. Howard Unwin

Unwin has made this statement, speaking of the Midnapore weir, which is constructed on a pattern similar to the Chanoine pattern, simpler in working, but more costly. C. W. Darley,  
Esq.

The back shutters were then raised by being hauled up, one by one, by a chain worked from a crab-winch fixed on a 50-ton barge moored in front of the line of shutters; the end of the wrought-iron strut behind dropped of its own accord into a recess on the floor as soon as the shutter was vertical. 9 June, 1896.

That part of the arrangement is exactly similar to what is shown by the model.

This operation was completed in two or three hours. The front shutters were then hooked down, and it was sometimes a tedious business, as the men were working up to their necks in water, and had to dive down to remove any silt or gravel which prevented the shutters from lying perfectly flat. After they were all in position, being weighted by a piece of kentledge, the disengaging gear was worked, and the hooks retained the shutters ready for the next operation. The working of the shutters took from ten to twelve hours, and the permanent establishment consisted of fifteen lascars, with a few extra coolies during floods to secure the plant on the weir. At all times it was a matter of anxiety to those in charge in case a sudden fresh should come down in the middle of the operation; but for some years it had been carried on successfully, and during the past season the shutters were worked without the slightest hitch or injury.

1654. Then, even with a large staff, the work appears to be carried on with great difficulty? Yes. That weir was a very long one, but the principle is the same in every case.

1655. The weirs proposed on the Darling are fairly long? Yes; but the difficulty remains the same whether the weir is 100 feet or 600 feet long. It is only the matter of a little more time. Mr. Vernon-Harcourt, speaking of the weirs on the Seine, says—

Similar weirs were erected about the same time for the navigation passes on the Marne, but a foot-bridge carried on movable frames was substituted for the barge to carry the crab for closing the shutters. This alteration was found so desirable that it has since been introduced at most of the movable shutter-weirs.

They were obliged to introduce movable weirs on the Seine to prevent the water going over the banks.

1656. In a stream the maximum rise of which has been obtained, it might be possible to erect an overhead bridge to enable you to work movable shutters, but where the maximum rise is not known you have no guarantee that your foot-bridge may not be under the water at a time when you want to work upon it? There would be no guarantee. I think that a foot-bridge is practically out of the question, where you have a rise of 40 feet. As an engineer, I could not recommend any form of movable weir in a river like the Darling.

1657. Not of any type? Not of any type.

1658. Even if you so arranged the shutters as to prevent leakage? No. On the other hand I think that fixed weirs would be found peculiarly suitable for the Darling.

1659. If a big flood were coming down the Darling, would the whole of these movable weirs be laid down by the water at one and the same time? One big flood would lay them all down.

1660. But would they all be depressed at the same time? Not necessarily at the same time. Directly a wave of a certain height passed over the weir, it would reach the shutters, and they would then have to be tripped.

1661. And the men in charge would have to take advantage of the falling of the water to replace the shutters? Yes.

1662. Under ordinary circumstances would a staff be required for each of the weirs? Yes; there would have to be a large staff at each weir. You could not move the staff from one weir to another quickly enough.

1663. The shutters would "feather" or tilt automatically? Yes.

1664. But manual labour would be required to replace them? Yes.

1665. You wish to accentuate the difficulties of replacing the shutters? You would have to get the shutters up again when the river commenced to fall in order to conserve the water. You would have to have men standing by in a barge to fish for them, and to pull them up, and in this country I do not think the work could be done with fewer men than four. You must have your barge very strongly moored in front of the weir, because of the current, and every shutter you put up would increase the strength of the current, so that if you were not careful you might have the barge drawn through.

1666. If any of the shutters were damaged a tremendous leakage would ensue before it could be repaired? Yes.

1667. How long would it take to empty the weir with the amount of leakage you speak of? I am only speaking of the experience on the Seine. I do not know what space Mr. McKinney proposes to leave between his shutters.

1668. *Chairman.*] Let us take it for granted that the space between the shutters is 2 inches, which, you say, experience has shown to be the minimum space that can be used? What I said was that on the Seine they had originally spaces of 4 inches, which they afterwards reduced to 2 inches. Allowing 2 inches between each of the thirty-three shutters, I calculated that 162,000,000 gallons per day would pass through the weir.

1669. How much water goes along the Darling at Brewarrina? I have seen the river when there was not anything like 160,000,000 gallons a day passing down at Bourke.

1670. Then your impression is that unless the shutters were closer together the weirs would empty themselves? I think so. At times the Darling is almost stagnant. In wet seasons, of course, you could let the water go through.

1671. *Mr. Lee.*] Let me now pass on to the question of fixed weirs. First of all, I should like to know whether a proposal to raise the water of the Darling 11 feet above summer level would be in keeping with the contour of the banks of the river? I do not see any objection to permanently raising the height of the water 11 feet.

1672. Would 11 feet be the limit? Experience shows that weirs put across a river at intervals do not raise the flood-level to any serious extent.

1673. You think that 11 feet would be a very safe limit to adopt in the Darling? I think so, the banks there being so high.

1674. How would you suggest that fixed weirs should be constructed? When I originally dealt with this matter I looked upon the Darling as rather too narrow to allow of the construction of weirs and locks at the same place in the bed of the river, and I might briefly state the reasons why I came to that conclusion. On the Seine they have invariably selected places where there are islands, and have put the navigable pass and lock on the one side and the weir on the other. But with a narrow river like the Darling, in which the flood water comes down with a velocity of 4 miles an hour, and sometimes more, a vessel

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vessel missing the lock entrance, might be swept broadside on to the weir and rolled over it, supposing the lock and weir were placed side by side. I found, however, that on the Lower Darling it would be possible to make the locks in the necks of the bends of the river, putting the weirs in the river itself. There may be places above Bourke where it would not be feasible to do this, but wherever possible, I should endeavour to make such an arrangement, in order to protect navigation, and to give the whole width of the river for the weir.

1675. The danger of which you speak would only exist when the river was in flood? Yes; but as you approach a lock, there will always be a draught, which, if you do not have your lines made fast quickly, will sweep a barge side on to the weir.

1676. *Chairman.*] The mouth of the proposed lock is against the by-wash? Yes.

1677. Do you think that it is a wise thing to have the by-wash near the mouths of the locks? I think it would be better away. Naturally there would be a strong flow to the pass, which might draw a vessel broadside round.

1678. *Mr. Wright.*] In constructing a weir, you would construct it below the level of the banks? Yes; the water would always pass over a solid weir.

1679. *Mr. Lee.*] You are of opinion that if it were determined to lock the Upper Darling, it would be wiser to place the weirs in one position and the locks in another? Where it could possibly be done, I should recommend that course.

1680. But would not the arrangement involve additional expense? I went into the matter some years ago, and according to my estimate, it would not be much more costly than the scheme before the Committee? The excavations could be made comparatively cheaply, and you would get more solid ground for the lock work.

1681. Do you know of other places where similar arrangements have been made? I do not know of any case where a river like the Darling has been dealt with.

1682. The conditions of the Darling differ very greatly from the conditions of other streams where locking has been adopted? Very much.

1683. Your opinions are based upon personal knowledge, and upon your experience of the Darling? I am speaking from my personal knowledge, and am giving you the conclusions I have arrived at from my own observations.

1684. If you adopted fixed weirs, the navigation as a matter of course would always have to go through the locks? Yes; except in flood-time when there was sufficient water going over the weir.

1685. Of what material would a solid weir be constructed? Of concrete chiefly.

1686. Would not the drift timber affect such a weir? No; a concrete weir will stand a very heavy impact. We have two such weirs upon the Nepean and the Cataract. We have had 10-ton rocks pass over the Nepean weir, and have had 70 feet of water passing over it without injuring it.

1687. Do you know anything about the weir which is being constructed at Bourke? No.

1688. It is not under your supervision? No.

1689. Would there be any difficulty in obtaining suitable foundations in the Darling for solid weirs? You would have to select rocky bars, and these the surveys show to exist at frequent intervals.

1690. Would it be fair to assume that concrete weirs upon such a foundation would stand the wear and tear of every flood? They would be quite safe against floods. Special precautions would have to be taken to prevent the bank from being washed away at the ends of the weir, but similar precautions have to be taken in connection with all river work.

1691. Have you examined the design of the proposed lock placed before us? I have looked at the sketch of it.

1692. Are you able to tell us whether it is designed on modern principles, and would answer the conditions of the Darling? There is one matter which I cannot help thinking has been overlooked. Mr. McKinney states, in page 3, of his evidence:—

When the river rises to navigation level each shutter will be pulled forward till the sloping strut is disengaged from its rest, and they will then be allowed to fall back flat on to the sill. During floods, the whole weir will thus rest flat on the river-bed, and the lock-gates will be opened, so that the only part of the work which will in any way obstruct the flow will be one lock wall.

I have had a great deal to do with locks, but I am quite unable to see how you could open the two lock-gates at the same time.

1693. Must the lock-gates open upstream? Yes; you could open either the upper or the lower lock-gates, but I cannot see how you could open both pairs of gates unless you applied very great force.

1694. From an engineering point of view, you are of opinion that there is some mistake? I say that with that design navigation through the lock would be impossible at a certain stage of the river level.

1695. *Mr. Black.*] But even if the flood-gates could not be opened, navigation would not be prevented, because the weir would be down? No.

1696. *Mr. Lee.*] Would the water impounded by the shutters be sufficient to prevent the opening of the two lock-gates? You could open one pair of gates, and leave them open, but there would be a head then against the other pair, and a very small head would prevent you from opening these gates. You could not open both pairs of gates at the same time whenever the river was running.

1697. But is not the proposal to leave both of the lock-gates open in flood-time? Yes; but I do not know how you are to open them.

1698. They could be opened before the water rose to a certain height? You could not open them both at the same time, so long as there was any flow in the river. You must have the same level of water on both sides of the gate before you can open it. I have spent a good part of my life upon canals, and I know something about the working of lock-gates.

1699. If the shutters were down, would it not be possible for the men to open the gates before there was any great pressure? If you had sufficiently strong machinery, you could pull the gates open against any pressure, but under ordinary circumstances you could not open them.

1700. You assert that it would be an engineering difficulty to open these gates if there was a flow of water down the river? If the water on one side of the gate is an inch higher than the water on the other side, there will be considerable pressure against the gate. If the difference in height is only very small you may open the gates an inch or two, but the moment you do so you create a strong current, which slams the gates shut against you. If you let go the weir, you would have a quick flow in the river, and you would have a head of several inches between the gates. You could open either the upper or the lower pair of gates, but you could only open one pair at a time.

1701.

1701. Do you say that the design from that point of view is defective? No, I do not say that; but you would not be able to make use of the lock to allow water to run down the river. You would have to content yourself with allowing the water to pass over the weir.

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1702. But do I understand that in times of partial flood, when there is only sufficient water passing down to create a current, and not sufficient to make it necessary to let go the weir, there will be an engineering difficulty in opening the lock-gates so as to allow of vessels passing through? No; you could always do that, but you could not open both gates at the same time. In letting vessels through a lock you open one pair of gates at a time. Whenever the water rose over the top of the lock you would not be able to use it, and vessels would then have to go over the weir.

1703. Do I understand that no matter how the weirs were constructed, or how the locks were constructed, there must be a stage in flood-time when navigation would be suspended? I think I am wrong in saying that navigation would be suspended. Navigation might not be able to go through the lock, but it might possibly go over the weir.

1704. Will the lock be higher than the weir? If the water is over the lock I think navigation will be able to go over the weir, though, of course, you would have to let the shutters go. The gates are designed on the old balance-beam principle, which has been adopted on all the canals in the old country.

1705. What is your opinion as to the policy of locking the Upper Darling? When I reported upon the locking of the Darling generally, I pointed out that I could not anticipate any immediate return from the work; but my general impression is that it would provide a very valuable and extensive piece of water for inland navigation, which could be made serviceable at a comparatively small cost. In no part of Europe have 1,000 miles of inland water been opened for navigation for anything like so small a sum as the locking of the Darling would cost. Of course, the colony may not be ripe for the work yet, but the day must come when it will be very desirable to provide for inland navigation. Nothing tends to settle population more than cheap carriage, and before the days of railways America was largely developed by the improvement of her rivers and canals. I look upon this as a national work, though I do not anticipate that it could be made to pay. I do not know that undertakings of this class pay, or are expected to pay. It is for wiser heads than mine to say whether the day has come when this work should be undertaken, but I think that the day will come when it must be undertaken. With regard to irrigation, I have my own opinion about that. I think that to some extent navigation and irrigation are antagonistic. If you use all the water for irrigation, you will not have any for navigation. Sufficient water would be conserved to allow of a moderate amount of irrigation, but with large pumping schemes you would not have sufficient water for navigation.

1706. Since you first reported upon this subject, the question of opening up the country with railways, and of watering it from artesian bores, has come to be more understood;—does that cause you to modify your opinion in any way? Only so far as it lessens the possible usefulness of locking the Darling for irrigation purposes. I think it would be cheaper to utilise the water from the bores for that purpose, and those who have paid special attention to the matter say that the artesian water will last. If irrigation is extensively practised out there, population must increase, and then better means of conveyance will be required. This better means of conveyance you would obtain by locking the river.

1707. It is proposed to construct six weirs between Bourke and Brewarrina;—could the same object be obtained with fewer weirs? I propose to have 10-foot lifts, and that would allow you to have only four weirs, instead of seven, between Bourke and Brewarrina.

1708. *Chairman.*] Would not a 10-foot lift mean a 15-foot weir? In my original scheme I proposed to have 16-foot weirs, giving a 10-foot lift, as you will see by referring to Appendix 53 of my report.

1709. Having in view the friable nature of the soil upon the Darling, do you think that in flood-time the water would cut a channel round the ends of the weirs? We should have to take proper precautions to prevent that. In locking the whole river there would be a very large saving in having 10-foot lifts, instead of any lower lifts.

1710. Is it necessary to have as many weirs between Bourke and Brewarrina as are allowed for in the scheme before us? By adopting 10-foot lifts you would save three weirs, and you would conserve more water.

1711. What would be the effect upon the surrounding country? There would be no bad effect. A weir 10 feet high in the bed of the Darling would only raise the flood-level about 1½ inch.

1712. Would four weirs conserve sufficient water to make the river navigable right along? Four weirs would give the same minimum depth as is proposed to be given by the scheme before the Committee, and would impound 117 per cent. more water.

1713. Would the cost of the scheme be increased or decreased? It would be decreased, because there would be fewer weirs to construct.

1714. But the weirs would be of larger dimensions? Yes; but foot for foot they would be cheaper. In my report I showed two designs, subject to alteration hereafter as circumstances may require.

1715. If you were submitting designs for the work under consideration, you would propose four weirs? Yes.

1716. *Mr. Fegan.*] What would be the life of a lock in the Darling? If properly constructed the only thing that could perish would be the timber gates, and there are lock-gates in the old country which have been in use for over 100 years. The lining planks might require repairs. The life of any perishable part of the lock would be the life of good ironbark timber.

1717. Therefore, the first cost would be the only cost? Yes; and one man would be quite sufficient to attend to each lock.

1718. But, if the scheme before us were adopted, three or four men would have to be employed at each lock, or twenty-eight men altogether? Yes. Of course you might make use of the men about the neighbourhood in some other way, but I do not think you could handle a movable weir with fewer than four men as a permanent staff, with extra men in flood-time. I have had no personal experience of these movable weirs, so that I do not know how few men could work them. You must have a punt, which must be strongly anchored, and you would require men to lay out the anchors. I think that four would be the minimum number required.

1719. Do you know the country about the Darling? I have been to Bourke, and I have been to Wentworth, but I have not been along the river much.

1720. Do you think that the construction of locks and weirs below Bourke would be the means of sending our trade to South Australia? I think that the subject is one upon which the Railway Commissioners should have

C. W. Darley, Esq., have a voice, and that tolls should be charged, which would prevent much trade from going out of the country.

9 June, 1896, 1721. You do not believe in having a free river? I think that it would be perfectly legitimate, if the colony undertook the large expense which would be necessary to carry out the work, to take such steps as would prevent her trade from being injured. The up traffic might be allowed to go through free, but the down traffic should have to pay tolls.

1722. You would make a difference between the up traffic and the down traffic, so as to give trade to the railways? Yes.

1723. Have you been able to give much attention to the subject of irrigation? Not much.

1724. *Mr. Hassall.*] The movable weirs in France and in other places have been adopted where there is a constant flow of water? In nearly every case.

1725. They are used to keep the water at a sufficient height for navigation? Yes; but the loss by leakage is not a serious matter there.

1726. The water passing down those rivers would not contain so much sediment as the Darling water contains? The Darling water contains a great deal of sediment.

1727. Therefore, a movable weir in the Darling would probably be silted up? No; because I think the velocity of the water would prevent the sediment from accumulating; but bits of stick and other things might settle down and cause trouble. I would not anticipate much difficulty from the sediment contained in the water.

1728. But with movable weirs in a river like the Darling you would gradually lose all your water by leakage? I think that in a long dry season the river would fall back to its normal low-water mark.

1729. The Darling practically dries up at times? Yes.

1730. Therefore, you do not think that the movable weir would be suitable for that river? I do not.

1731. I think you said that fixed weirs would be constructed of rock and cement? Yes.

1732. There would be very little danger of such weirs being injured by floating timber? None whatever.

1733. There would be no obstruction to traffic;—when the river was high the traffic would go over the weir, and when it was low it could go through the lock? Yes.

1734. Would the stream ever be too strong to prevent the working of the locks? No; you could always work one gate at a time.

1735. As a practical engineer, you think it would be inadvisable to go to the expense of constructing movable weirs? As an engineer, I would not recommend it. I might mention that the piers of the Bourke bridge offer almost as much resistance to the water as a weir such as I propose would offer.

1736. You think it would be cheapest, and a better form of construction, to have the weirs in the bonds of the river and the locks across the necks of the bend? I think so; in some places it would save 2 miles to go through the lock.

1737. Do you think that the work could be done as cheaply upon that plan as upon the plan submitted to the Committee? The whole work could be carried out as cheaply. While I would construct very substantial weirs, I would make fewer weirs than are proposed in the scheme before the Committee, and the maintenance would be less.

1738. You would only require a lock-keeper at each lock, who would have the assistance of the boat hands when necessary? Yes. I know of places in the old country where there are no lock-keepers at all. There is one place in South Wales where there are seventeen locks in 4 miles of canal, and, although there is a very heavy coal traffic upon that canal, there are no lock-keepers employed. The boatmen do all the work themselves. Out on the Darling, however, you would have to have lock-keepers. I made my original estimate pretty full, and I have revised it by using the prices adopted by Mr. McKinney. Mr. McKinney makes his six locks cost £121,000, and I would make four locks cost £110,000.

1739. And you think that four locks would answer the purpose of six? Yes.

1740. The weirs being made a little higher? Yes.

1741. *Mr. Roberts.*] Will you explain the statement that the Darling could be rendered navigable for less than has been paid in Europe to render similar streams navigable? Well, the average fall in the Darling is only 3 inches to the mile, so that the locks could be placed 40 miles apart, whereas upon most of the European rivers they have had to put their locks much closer together. I cannot find any instance where navigation has been opened up for 1,000 miles for as little as it would cost on the Darling.

1742. Do you think that the Government would be able to collect tolls upon the Darling? I pointed out in my report that I did not anticipate that the tolls obtainable would be sufficient to pay interest upon the expenditure.

1743. Any benefit that would accrue from the work would be an indirect benefit? Yes. In Europe they very rarely charge tolls at all. On all national canals no tolls are charged.

1744. That is especially the case in France? Yes; the canals are all free there. The State does not look for a return.

1745. I think it is fair to assume that no direct revenue would be obtained here? I do not think that the country would obtain any direct return worth speaking of.

WEDNESDAY, 10 JUNE, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHREY.  
 The Hon. CHARLES JAMES ROBERTS, C.M.G.  
 The Hon. WILLIAM JOSEPH TRICKETT.  
 HENRY CLARKE, Esq.

CHARLES ALFRED, LEE, Esq.  
 JOHN LIONEL FEGAN, Esq.  
 THOMAS HENRY HASSALL, Esq.  
 GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Cecil West Darley, Esq., Engineer-in-Chief for Public Works, Department of Public Works,  
 sworn, and further examined:—

1746. *Chairman.*] Do you desire to make any statement before the Committee proceed with their examination? I think it is due to the Committee that I should say a little more in defence of my suggestion that fixed weirs should be adopted in the Darling. In my original report I expressed the opinion that fixed weirs should be placed in the Darling in preference to any form of movable weir. The objection has been raised to fixed weirs that the river is apt to silt up behind them, but that has not been the experience in England upon the Severn, the Weaver, and the Thames, where fixed weirs have been very largely used with the most complete success. It has been found, indeed, that the presence of a weir, instead of tending to cause a river to fill up, creates a scour, which deepens the river; and, as bearing upon this subject, I should like to read a statement which occurs on page 75, vol. 60, of the Proceedings of the Institution of Civil Engineers. Mr. W. Parkes, quoting Mr. Leader Williams, the engineer of the Manchester Ship Canal, says:—

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"At Holt, an old barge, which had been laid up as useless by the contractors, got adrift, and sunk in 10 feet of water, 20 yards above the weir. It continued undisturbed during the short-water season, but the first heavy fresh raised it from the bottom, and laid it upon the upper sill, there not being sufficient water to carry it over. Another proof of the uninterrupted action of the undercurrent is that the bottom of the channel, immediately above the weirs, not only maintained its original depth, but has been scoured out in some instances to a depth of 2 feet." It was, therefore, evident that two or three years after the works had been completed there was nothing of the evil which Mr. Walker had anticipated. In place of the accumulation which he expected to find there was actually a deepening, and this barge was brought up by the flood and carried away to the weir.

There have been many similar cases which illustrate that the effect of the weir is rather to deepen than to shoal the river above them. Further on Mr. Parkes, again quoting Mr. Leader Williams, says:—

"On comparing the original section of the river, made in 1842, before the weirs were erected, with a series of transverse soundings taken at 16 feet from the head of the weir, it was found that the depth of the channel had been actually increased 3 feet to 5 feet. On taking longitudinal soundings 1½ mile up the river it was again found that the depth had been increased the whole distance 3 feet to 5 feet. The same effect had been produced in the whole of the pools between the weirs; the channel, indeed, was deepened to such an extent that the banks which had stood for many years previously had in some places fallen in from the increased energy of the current having scoured out the bottom." This was some fifteen or sixteen years after the weirs were erected, and surely there was plenty of time during that interval for the anticipated deposit to have taken place if there had been any tendency towards it; but the tendency was evidently in quite an opposite direction, namely, to scour out the river.

1747. What is the reason for this scour? The velocity of the bottom current is slightly increased above the weir. Mr. J. T. Harrison, an eminent engineer in the old country, and a man of long experience in harbour and river works, makes this statement:—

Some years ago he had occasion to consider carefully the action of the weirs on the Thames, Severn, and other rivers; he therefore ventured to offer a few remarks on the subject. One great advantage of fixed over movable weirs was that they were self-acting. True, Mr. Vernon-Harcourt pointed out that movable weirs might be "to a certain extent made self-acting"; but the movable weirs which he described were not generally so, and when required to be moved by manual or other labour they were open to serious objection. They were at times kept shut until mischief was done, or they were opened without proper notice being given to those who had charge of the weirs below, and serious injury was done by the artificial flood thus created, and the water overflowing the lands below. There was a notable case of this mischief at Great Marlow. Fixed weirs, properly constructed, were not liable to such contingencies. The prevention of land-flooding on many rivers in England had become a matter of urgent importance, and the great question was, could these floodings be prevented without interfering with, or doing away with, the navigations and the mills, for the benefit of which they were employed? His conviction was that fixed weirs, properly constructed, in connection with those river improvements, necessary for navigation, and desirable even for mills, deserved the merit claimed for them "of actually increasing the rate of discharge and diminishing damage from floods."

I should also like to read a note by Mr. Baldwin Latham:—

Fixed weirs might be used in some rivers without detriment, provided the banks of the stream were high, and the water was impounded at a level well below the surface of the adjacent land.

That touches a point I wished to impress upon the Committee yesterday. On the Darling we have high banks, and the water is impounded well below them. It was the absence of such conditions that compelled the French engineers to adopt movable weirs. On the Seine the banks are low, and they could not afford to raise the flood-level. On the Darling, however, if we raise the summer level in steps of 10 feet, it will not affect the flood-level. It is for this reason that I think that fixed weirs would prove eminently suitable on the Darling, and thus the costly maintenance, and still more costly management of the movable weirs, would be saved.

1748. Shutter-weirs have been adopted to meet the case of rivers exactly the reverse in their conditions from the Darling? Yes, to meet the case of rivers having low banks.

1749. *Mr. Black.*] Do you think it would be possible, by flanging the shutters of a movable weir, to prevent the escape of water, or would that arrangement be dangerous when you were lowering the shutters? You could not have flanges, because the shutters must pass over each other at all angles. You could not possibly put any kind of flanges on the shutters.

1750. Could not the difficulty be got over by having movable flanges? It would be got over by caulking up the weir for that matter, but then the weir could not be operated in case of need.

1751. Even if movable flanges were adopted the amount of supervision that would be required in order that flood-water should be permitted free passage would make the system too expensive? Any attachment of that kind would want to be managed with great judgment, so as to allow of the weir being operated when a flood came; but the whole advantage of movable weirs is to have them automatic.

1752.

C. W. Darley, Esq., 1752. What space would it be necessary to have between the shutters in order to allow for the swelling of the wood? On the Seine they originally allowed 4 inches, but they afterwards reduced the space to 2 inches.

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1753. That space would be diminished by the swelling of the wood? It is not so much the swelling of the wood that has to be taken into account, but you cannot make a nice mechanical fit with shutters which are resting on the bottom of a river. A little tilting of a hinge, caused by a stone or piece of stick getting underneath, would throw one shutter over on to its neighbour, and that would prevent two shutters from acting.

1754. Yesterday you said that when the river was running 4 or 5 miles an hour a boat missing the lock might drift against the weir, and thus be overset;—if the river was running at that rate, would not the shutters of the weir be down? The shutters of the weir do not fall until there is a certain height of water passing over them. I was referring to the first of the flood-water. The floods come down the Darling in a series of waves, running at the rate of about 4 miles an hour. The navigation pass would be open, so that there would be a considerable draught close to the lock, and through the pass. This might catch a boat, and swing it round, and there might not be enough water upon the weir for the boat to pass over, in which case it would lodge on top of the “feathered” shutters.

1755. Do you not think it would be possible for the captains of river boats to make fast to the banks until the danger was over? When they are going down stream they like to take advantage of the floods. On a journey of 1,000 miles they would not like to tie up and lose the flood.

1756. But under certain circumstances it would be better to go slowly and to avoid danger? Yes; but I look upon the river as a public highway, and we have no right to do anything to it that would put a serious obstruction in the way of vessels going down it. If we constructed works which would make it necessary for the shipping to tie up until the flood ceased, I think we should be doing an injustice.

1757. Did I understand you to say that shutter-weirs were in use on the Rhine? I did not mention the Rhine—I mentioned the Seine.

1758. Is the Seine, where these weirs have been constructed, a swiftly-running river? Not very. It is, to some extent, a tidal river.

1759. How fast does it run? I do not know what the velocity of the Seine is. There, in most cases, they have placed the locks on one side of an island and the weirs on the other side. They have, as far as possible, selected places where they could keep the locks away from the weirs.

1760. The Seine has not the tortuous course of the Darling; it would not be possible to cut across bends there? No; but there are a good many islands or middle grounds, and in a good many cases the locks take one channel of the river, and the weirs the other. It is a wide, flat river, with shoals and islands in the middle of it.

1761. Is there, among the appendices to your report, a plan of any locks and weirs proposed to be constructed between Bourke and Brewarrina? No; my report only dealt with the river between Wentworth and Bourke.

1762. The river pursues the same tortuous course above Bourke as below it? I have not studied the matter, but I know that there are some bends there. I cannot say that suitable sites could be selected for such locks and weirs as I propose on the lower river. If such sites could not be found, you would be forced to put both the locks and the weirs in the channel of the river.

1763. What is the average length of locks when constructed parallel with the course of the river? In the proposal before the Committee I think the length is 200 feet. In my proposal the length is 132 feet.

1764. But what about the locks you proposed to construct across the necks of bends? They would only be 132 feet long; but there would be a canal giving an approach at each end which would vary in length according to the width of the bend.

1765. Locks constructed in the middle of bends would not be more expensive, and would probably be less expensive than locks constructed in the bed of the river? I think that the lock itself would be less expensive, but there would be more excavation to do. That, however, could be done cheaply.

1766. The construction of the canals would be an additional expense? Yes.

1767. The canals would be very expensive where a distance across a bend was very great? In none of the cases referred to in my report is the distance very great. I think that the place of which a plan is shown in Appendix 52 is one of the widest bends.

1768. What would be the length of the canal there? About 1,500 feet.

1769. How much soil would have to be removed in the construction of that work? I have no information with me now, but I can supply it.

1770. Would the soil removed be used for an embankment? My intention was to utilise it to fill up some lagoons, and to raise the ground in the neighbourhood.

1771. Would the lower end of the canal be empty of water, except when the lock was opened? No.

1772. Then it would be below the level of the river? It would be 6 feet below the level of the river.

1773. When the river was at its normal height, both ends of the canal would be full of water? Yes; so that shipping could navigate the canal.

1774. Is there any danger of locks, such as you propose, being rendered useless by the river changing its course? I do not think so. You can always watch for that and prevent it.

1775. Is there not danger, in cases like the Darling, of the river changing its course in flood-time, especially if it meets any obstruction? If a river took a short cut above the lock and weir, that would render them useless, but it might occur in any case, and steps would have to be taken to prevent it.

1776. But would not a fixed weir, being a permanent obstruction, increase the danger? Not at all, because we do not materially raise the flood-level. I showed yesterday that a weir, giving a 10-foot lift, would only raise the flood-water  $1\frac{1}{4}$  inch. Of course, if we saw that the river showed a tendency to cut through the bank we could stop it.

1777. You could prevent it? Yes; we could put a wall across wherever the river showed that tendency.

1778. But you could not prevent it in time of flood? The Darling never alters its course in one flood. The Hunter, which runs through much softer country, does not alter so quickly as that unless the bank has been cut into. Then it must be borne in mind that my locks would be placed in the cut-off where the river would be likely to flow, and would be protected by concrete work. Once the river crossed the lock it would keep to the channel, because the material excavated from the lock would make a bank on either side above flood-level.

1779. Is there any danger of the earth round the walls of the lock being scoured away by the action of the water in flood-time? There would always be that danger with any structure placed in the river, if it were only a pile bridge. We should have to take precautions against it.

1780. Is not the danger so great as to make the desirability of constructing locks in this fashion very doubtful? I do not think so. It is simply a matter of adopting proper precautions.

1781. You think that the danger is not so great as to make your scheme inadvisable? I do not think so. I do not think that there is more danger in connection with my scheme than in the scheme before the Committee, if so much.

1782. You said yesterday that if the scheme before the Committee were carried out navigation would, at certain times, be blocked, because it would be impossible to open the lock gates, and the flood-water would not have risen a sufficient height to lower the shutters? I was explaining to the Committee that it would be impossible to open both lock gates at the same time, unless the river were almost stagnant.

1783. Would it be possible, under your system, to open both lock gates? No; there would be no necessity for it.

1784. Then the navigation would be suspended in that case too? 'No; because when the water is running over the top of my lock gates navigation across the river would be possible. I referred to the matter yesterday because of a statement in Mr. McKinney's explanation of his scheme, which I read to the Committee. The difference between the height of my lock gates and the height of my weir would be very much greater than the difference between the height of Mr. McKinney's lock gates and the height of his weir. When my lock gates were submerged there would be something like 12 feet of water passing over the weir.

1785. Then is your weir so much lower than the proposed shutter weir? No; but my gates are higher than Mr. McKinney's gates.

1786. I understood you to say yesterday that with Mr. McKinney's scheme there would be a stage in flood-time at which navigation would be impossible? I only remarked incidentally that, having looked at the plan, I believed that there would be a stage at which navigation might be stopped for a time.

1787. Under certain circumstances, I suppose that would be true of any scheme? Not with higher lock gates.

1788. Then if the height of the lock gates in the system before the Committee were increased the difficulty would be got over? That would necessitate the recasting of the scheme to a great extent.

1789. *Mr. Humphery.*] From a return laid before the Committee, it appears that the river Darling was open for navigation for eight months in 1886, for nine months in 1887, for nearly the whole of 1890, for the greater part of 1891 and 1892, for nearly the whole of 1893, and for a great part of 1894. It appears to me that the solid advantage offered by Mr. McKinney's proposal, as compared with your scheme, is that when the river is at navigable height there would be no necessity to use the locks? But at the same time you would be losing the water which it is proposed to impound for irrigation purposes.

1790. That would not matter whilst the river is not running below the level of the tops of the weirs? Well, if there were any objection to the use of locks, there might be something in that.

1791. Would you have six or seven locks between Brewarrina and Bourke? I would only put in four.

1792. Would it not be a great convenience to be able to dispense with the locks for a long period in each year? The locks could only be dispensed with in flood-time, and the floods do not last very long.

1793. What depth of water would be required in the river to render it navigable? Somewhere about 8 feet.

1794. According to the report before us the river was at that height for the periods I have mentioned, without the use of weirs? There can be no possible objection to the use of locks, because a vessel can pass through them with very little delay. I do not see that there is anything gained in the way you suggest.

1795. Would there be any difference in the annual cost if it were found necessary to use the locks during only (say) half the year? There would be a larger saving where you had a fixed weir, because then you would have to employ only one man at each place for the whole year.

1796. In your opinion there can be no comparison between the fixed weir and the shutter-weir system? That is my opinion.

1797. It has been suggested by Mr. McKinney that it would be possible to close the apertures between the shutters if the water were leaking away very fast? I think that something might be done in that way; but you would have to be careful that you did not prevent the working of the shutters in flood-time.

1798. In a report on the subject, to the Minister for Works, it is stated that the construction of high weirs cannot at present be entertained, and that the construction of fixed weirs, or of works of any kind which would interfere in any degree with the flood section of the river, would involve much risk and expense;—what is your opinion with regard to that? I have expressed the opinion—and I have shown that it is the opinion of many eminent engineers—that there is no objection to fixed weirs. I think that the experience of the old country is worth more than mere expression of opinion out here. Experience elsewhere shows that there is no objection to fixed weirs.

1799. Touching the construction of locks, it is stated, "The velocity of the current across the neck of a bend is greater than that of the normal current of the river, and, consequently, there is a tendency to erosion in the former case which would have to be guarded against in the whole length of a lock cutting in such a site. Under any circumstances this would involve a heavy outlay; but when it is considered that, generally, such cuttings would be in friable alluvium, and that the land on both sides of the cutting would be below flood-level, it is difficult to see where such outlay would end?" I would point out that the material excavated from the canal would raise the banks above flood-level, and prevent that crossing. 1800. It is further stated, "If the lock walls in such a position were carried above flood-level the obstruction thus presented to flood-waters would create a tendency to scour behind these walls as well as their down-stream ends, so that in every flood precautions would have to be taken to prevent the formation of channels across the bend at both sides of the lock channel." What remark have you to make upon that statement? Wherever you construct a lock you must observe certain precautions, but I think that you are more likely to get solid and firm ground in the middle of a bend than in the bed of a river. There is risk to be provided against whenever you undertake any form of construction in or near a river, but I think that in this case the risk would be less when the lock was constructed in the middle of a bend than when it was constructed in the bed of a river.

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1801. This is another quotation, "If a permanent weir were constructed in the river channel, and a comparatively small channel cut through the neck of a bend adjacent to the weir, it is evident that a strong tendency would be created in the river to enlarge the cutting across the bend"? The cutting is again blocked by the work connected with the lock. If the water rose over the lock gates it would be concentrated in the channel formed by the banks of the canal.

1802. Yesterday you spoke about there being a risk of vessels being drawn against the weir, supposing the proposed scheme were carried out. I find a sentence to this effect, "The only objection that can be raised to the arrangement of having the lock and weir combined is that steamers or barges might be drawn against the weir by the current. This objection, however, does not hold good, as the weir would be opened before the depth of water on its crest exceeded 2 feet, and there would be almost still water down to the lock gate." Does that answer your objection? That is not in accordance with the design which I looked at, because there is an open pass between the weir and the lock wall in which there would be a strong current. Before the shutters tilted the water would be running over the weir with very considerable velocity. If there were only 6 inches of water going over the weir the velocity would be very considerable, and the shutters will not feather until the water rises 6 inches or more over the top of the weir.

1803. Therefore you think that your objection holds good? Yes. Apart from the weir, two passes are shown through which the water would run with great velocity.

1804. With regard to the item of cost, your estimate includes £250,000 for dredging the river and £25,000 for snagging and clearing the river banks;—would any part of that expense be chargeable upon that portion of the river between Bourke and Brewarrina? The report to which you refer deals only with the river between Wentworth and Bourke.

1805. Would any expense have to be incurred in snagging and dredging the river between Bourke and Brewarrina? That will depend upon the depth required. With high weirs less dredging will be required than with the low weirs.

1806. Do you think that provision should be made for that expenditure in an estimate of the cost of the scheme? I think that something should be allowed for the improvement of the river.

1807. What do you think would be a fair sum to allow? I do not know. I have not seen a detailed survey of the river, nor have I been on it above Bourke.

1808. In the report to which I have already referred, mention is made of a dam constructed at a cost of £1,600 on the Tally Walka, which runs through part of Killara Run. When the flood of 1879 occurred, a new channel deeper than the old one was cut by the water in one day, and the water flowed past the dam;—would a similar occurrence be as probable in connection with your scheme as in connection with Mr. McKinney's scheme? You have the same risk with every construction you make, and you must take precautions against it. Many of the dams made by the squatters up country do not allow of proper provision for the by-wash. You must design your work properly, and take every precaution against injury.

1809. Risk will exist whatever system be adopted? Yes; it is common to all systems.

1810. *Chairman.*] Do you know anything about the Menindie dam? That dam was made under the most extraordinary circumstances. There was a great outcry at the time in Sydney about the necessity of finding employment for labourers, and it was said—I think by the Member for the district—"If you only put a dam at Menindie Lake you will conserve a vast quantity of water." Therefore, although there was then a very high flood in the Darling, some 100 men were sent to Bourke, and then down the river to Menindie, to make the dam. If any one had a difficult task, it was the engineer who had to construct that dam upon a river in high flood. The dam had to be made by tipping bags of sand into the river, and, considering the circumstances, has been a very fair success. It is only fair when speaking about the thing as a failure to remember this explanation as to the circumstances under which it was constructed. I believe that a good part of the dam is still holding, but another channel has since be deepened.

1811. *Mr. Hegan.*] When was the dam made? About 1884, I think; but I really forget the date.

1812. *Mr. Humphery.*] In any case, a similar result would not be likely to occur on the Darling? No.

1813. You say that if fixed weirs were constructed only one man would be required at each lock? One man would be sufficient for each lock and weir.

1814. What is your lowest estimate of the annual cost of maintaining the proposed locks and weirs, movable shutters being adopted? I have had no experience of the cost of maintaining and managing movable weirs, and I do not think that many engineers in this country have had such experience. Yesterday, however, I quoted from a report by Mr. Unwin, who has had charge of one of these weirs in India, and who speaks of a permanent staff of fifteen lascars being required, with extra men in flood-time. Assuming that one European is the equivalent of four lascars, I think it would be safe to say that, considering the work to be done, at least four men would be required on the Darling. All the engineers who have had the management of these weirs speak of their liability to get out of order. Every log coming down the river is apt to injure the shutters, so that a certain amount of expense in connection with repairs must be anticipated.

1815. The annual cost of maintaining a system in which movable weirs are used would be much in excess of the cost of maintaining a system of fixed weirs, is that so? That is my opinion.

1816. In your report in 1890 you estimate the cost of the locks to average £23,000 each and weirs £5,000? I estimated that each set of locks, weirs, and lock-keepers' houses would average £28,400.

1817. Are you prepared to reduce that estimate now, having regard to altered conditions? You could take £2,000 off each set. I made an approximate estimate, based upon current prices of material and labour, according to which it would be possible to construct each set for £26,300.

1818. Then the cost of locks and fixed weirs required between Brewarrina and Bourke would be about four times that? Well, Mr. McKinney has six lifts of 7 feet each. If you had four lifts they would have to be 10 ft. 6 in. each, so that the cost of the scheme on my estimate would be 4.2 times £26,300, or £110,400, as against £121,000 according to Mr. McKinney's estimate.

1819. *Chairman.*] You stated yesterday that your locks would impound 117 per cent. more water than would be impounded by Mr. McKinney's weirs in this case? Yes. I have a diagram showing the difference.

1820. And at certain points the lift from the river level to the top of the banks would be less? Yes.

1821. The Pera Bore delivers 610,000 gallons per diem at an elevation of, I suppose, about 10 feet above the surface;—what would be the cost of lifting the same quantity of water from the Darling, the average lift

lift being 35 feet? Looking up various statements as to the cost of pumping in different places, I found that in a number of cases in England where the pumping was more or less continuous the cost is a trifle over  $\frac{1}{4}$ d. per 1,000 gallons lifted 100 feet high. The cost of doing similar work at the Crown-street pumping station here, where the pumping is more or less intermittent, has been  $\frac{1}{4}$ d., or nearly  $\frac{1}{4}$ d.; while if you follow the American authorities the cost there would be about two-thirds of a penny. Therefore, I have taken the cost of pumping water from the Darling as  $\frac{1}{4}$ d. per 1,000 gallons lifted 100 feet high, because, so far in the interior, repairs and stores will be more costly, and will increase the expense. On that basis I have estimated that the capitalised cost of raising 610,000 gallons per diem 35 feet high would come to £5,400.

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1822. That is the permanent value of the flow of the Pera Bore? Yes.
1823. £5,400 covers wages, fuel, replacement, and everything? Yes; it is the annual expenditure upon the capital value. For the purpose of comparison I put the cost of the bore at £2,000.
1824. Have you any information with regard to the flow of the Darling? No.
1825. Do you know the discharge of any of the tributaries entering it between Bourke and Brewarrina? I have no correct information upon that point.
1826. *Mr. Humphery.*] It has been stated that in France no tolls are charged upon the state waterways. That being so, do you think it would be reasonable to charge tolls upon the river between Bourke and Brewarrina? In America tolls are charged, and tolls are charged in England. You might, of course, make this a national work, and throw the river open to navigation free of charge, as has been done in some parts of France.
1827. Do not most of the waterways in France belong to the State? In France they throw most of their waterways open to navigation free of charge; but that practice is not universal. Toll is charged upon most of the large canals in America, and, I think, upon all the canals in England.
1828. You make no recommendation in your report upon the subject of tolls? No.
1829. *Chairman.*] It is a matter of State policy? Yes.
1830. Are you prepared to express an opinion upon the question of riparian rights? No.
1831. The weirs might, in a dry season, impound what little rain fell on the catchment area and prevent it going down the river, as it would under natural conditions;—that would interfere with the riparian rights of the people below? Such a thing as that might happen, of course.
1832. Not only might it happen, but it would be sure to happen? Of course every time the locks were opened a certain amount of water would be allowed to pass down the river, though not very much.
1833. The question of riparian rights should be considered? I think so.
1834. Have the riparian rights of the other colonies ever received any serious consideration? I do not think that the riparian rights of the other colonies would be interfered with by the construction of weirs in the Darling. You must not divert the river water, but you can impound it.
1835. A riparian right is the right to demand that the water flowing down a river under natural conditions shall not be diminished in quantity or affected in quality by the action of any person? The quantity of water flowing down the river would not be interfered with if the river were used only for navigation purposes. It would be interfered with if irrigation were undertaken.
1836. *Mr. Fegan.*] You have said that vessels have a right to go down the Darling;—how has that right been conferred upon them? It is an understood rule that all vessels have an unrestricted right to pass over naturally navigable water. The Board of Trade in England have recognised that rule, and where a railway company seeks to cross navigable water it insists that the company shall either build a bridge of a certain height or allow an opening through which vessels may pass.
1837. Therefore, if the Government carried out the proposed scheme they would be prevented from charging tolls? You can charge for improving the navigation, but you cannot interfere with the right of vessels to travel along the river. That was shown the other day by the action of some people who pulled down part of an obstruction near a weir in order to enable them to get their steamer through.

THURSDAY, 11 JUNE, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.	CHARLES ALFRED LEE, Esq.
The Hon. CHARLES JAMES ROBERTS, C.M.G.	JOHN LIONEL FEGAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	THOMAS HENRY HASSALL, Esq.
HENRY CLARKE, Esq.	GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Hugh Giffen McKinney, Esq., Chief Engineer, Water Conservation Branch, Department of Mines, sworn, and further examined:—

1838. *Chairman.*] You were present at Mr. Darley's examination by the Committee, and had an opportunity of hearing the evidence given by him? Yes.
1839. You desire to make a statement with regard to that evidence? Yes. By request of the Committee I have had the section now exhibited prepared to show an alternative arrangement of the locks and weirs between Brewarrina and Bourke, by means of which one lock and weir can be dispensed with. When going into the question as to the sites which should be adopted, I had no hesitation in deciding on those at Stony Point, Vincent's Rocks, No. 6, and Brewarrina; but in regard to No. 4 and No. 5, I had doubts as to the best course. The chief reason for recommending the arrangement adopting No. 4 and No. 5 was, that I had successful precedents ready at hand for shutters of the maximum size required. The scheme was thus designed on lines the safety and practicability of which were not open to reasonable doubt. But as a considerable saving in cost could be effected by the alternative design, it was only after weighing the points for and against each design that I decided in favour of the six locks instead of five. The scheme submitted to the Committee I estimate will cost £121,100, while the alternative scheme

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scheme can be carried out at a cost of £108,000. The alternative scheme involves a departure from the general design, as in this case, while the weir would be in the river channel the lock would be in the Beemery Cowl. The length of this cowl is  $1\frac{1}{2}$  mile, and the length of the river between its two ends is  $5\frac{1}{2}$  miles, so that when the river is low and the navigation passes through the lock, steamers will be able to shorten their journey by  $3\frac{1}{2}$  miles. The Beemery Cowl is occasionally used by steamers during high floods, but a considerable amount of excavation would be required to clear out its channel in places. This excavation has been allowed for in the estimate. The alternative scheme would substitute one lock and weir, with a 10-foot lift for weirs 4 and 5 of the original scheme; and it would also involve an increase from 6 feet to 9 feet in the lift at Vincent's Rocks, and an increase from 7 feet to 8 feet in the lift at No. 6. Regarding the practicability of working the increased lifts, I observe that in the locks and weirs on the Great Kanawha River the lifts vary from 7 feet to 9 feet; and I have no doubt that a 10-foot lift could be worked more easily on the River Darling than a 9-foot lift on the American river mentioned. If the Beemery Cowl be utilised as the navigable channel during low river, when the lock is in operation, the river channel would be used when the weir is open. Regarding objections to movable weirs which were raised by Mr. Darley, I am well aware that there are different opinions as to the relative advantages of fixed and movable weirs. English engineers have been slow in adopting the latter, and it is to be noted in this connection that in regard to the utilisation of rivers and of inland waterways generally, England is greatly behind France and America. The study of the question in England was greatly stimulated by the publication of a standard work on the subject of rivers and canals by Mr. L. F. Vernon Harcourt, M. Inst. C.E., and by various papers since published by the same author. As long ago as 1882, Mr. Vernon Harcourt called attention to the fact that shutter weirs of the Chanoine type had been largely used in France, and were being introduced with success in America. Further on the same authority adds, that with the adoption of the double-grooved shoes—that is the system of working now adopted in the scheme before the Committee—the Chanoine shutter weir is “perfectly manageable and easy of maintenance.” The writings of Mr. L. F. Vernon Harcourt and the invention of a very successful movable weir by Mr. F. G. M. Stoney, M. Inst. C.E., have had the effect of bringing movable weirs into increased favour and use in the United Kingdom. Objection has been raised to the movable weir on the ground of cost in working. From the simplicity and moderate dimensions of the proposed weirs and the slow rate at which changes in the level of the River Darling occur, I fail to see how any considerable expense in working can occur. The only cases for which I have been able to obtain full details of the cost of working locks and weirs of a similar design, are for works on a much larger scale situated on the Great Kanawha River, in America. The range of level of that river is as great as that of the Darling at Bourke, and it is liable to sudden rises and falls, so that on all grounds the circumstances are much more difficult. The locks on the Great Kanawha River are 350 feet long by 50 feet wide, and the weirs range from 400 feet to 670 feet in length. The traffic too is heavy, and much trouble is experienced in winter from ice. The average number of men employed at a lock and weir under these circumstances is about five, the actual numbers varying from four to seven. I have no doubt from the particulars given that the labour required at a lock and weir on the Darling will not be more than a-fourth or a-fifth of that required at a lock and weir on the river referred to. Mr. Darley mentioned a case in which fifteen coolies were required for the working of a movable weir on one of the Indian rivers. I am quite prepared to accept Mr. Darley's information on this point; but it must not be overlooked that there is no comparison between the case of the Darling and that of rivers like the Sone or the Godaver. In regard to the relative advantages of fixed and movable weirs, Mr. Darley quoted from a volume of the Proceedings of the Institution of Civil Engineers some opinions of an engineer of high standing in favour of the former. I wish to bring to the notice of the Committee an extract from a report of a speech by Mr. Baldwin Latham, one of the leading hydraulic engineers in England, on the same subject. The extract is as follows:—“In flat districts liable to floods, a fixed weir might raise the height of the floods and in such cases movable weirs had a decided advantage over a fixed weir; and it was to be hoped that they would be brought into general use in this country, as in many places they could be adopted with advantage.” The report of that speech appears in volume 60 of the Proceedings of the Institution of Civil Engineers. It was objected to the arrangement of locks and weirs proposed, that both gates of a lock cannot be opened. In reply to this I do not anticipate any difficulty in opening both lock gates when the river rises above navigation level. When the river rises to that level locks will not require to be used, and therefore the shutters will be opened down. When the river is allowed to flow freely through the weir space and the side bays, the water will be at practically the same level at both ends of the lock, and there will therefore be very little difficulty in opening the gates. In a river with a more rapid fall, and a greater velocity, there would undoubtedly be much difficulty in opening both gates, but the condition of affairs in the Darling is very different. At about navigation level the mean velocity in the river is only about four-fifths of a foot per second, or say half a mile per hour, and as the fall in the surface of the water averages only about 3 inches per mile, the difference of level at the two ends of the lock will not be perceptible. The point has also been raised that there will be a period during which navigation will be interrupted by the weir sills. This impression was doubtless due to the appearance of the sill of the Bourke Weir on the plan. In regard to the question raised, the navigation is really governed by the bed-level at a considerable distance away from the weir, the sill being really not above mean bed-level; but independent of this, it has to be borne in mind that as the quantity of water flowing in the river increases the side bays will be opened, and the height from the water below a weir to that above will diminish. Hence, while 6 feet is the minimum depth on the lower side of every weir, the depth when the shutters are lowered will be at least 2 feet more than this. A very important point in connection with the scheme before the Committee is that so far as navigation is concerned, existing conditions are not interfered with—that is to say, the proposed work will not impede navigation under any circumstances. This is an obvious advantage which the movable weir possesses over a fixed weir; but it is unnecessary for me to refer to this point further as it was clearly brought out in the examination of Mr. Darley, by Mr. Humphery. There are two points to which I have not yet been able to do justice, in reply to questions put by the Committee. One of these related to the value of the river traffic, and the other to the increased value of Crown land. In regard to the latter point, while in my opinion the construction of the proposed works would be warranted solely on account of their effect in stimulating settlement and production, details

regarding

regarding this point can best be obtained from Mr. McFarlane, District Surveyor, and Acting Chairman of the Bourke Land Board. In regard to the cost of the works relatively to the cost of the present traffic, I do not think this is the sole, or even the principal point to be taken into account. A point not mentioned previously, is the possibility of utilising the power which will be available at each of the weirs. I did not consider it necessary to go into details in regard to this, but there can be no doubt, that, in the course of time, this power will have considerable value.

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1840. *Mr. Clarke.*] You heard Mr. Darley say yesterday that upon the Darling fixed weirs were preferable to movable weirs;—are you still of the contrary opinion? Yes.

1841. Can you give us any reasons for preferring movable weirs? A permanent weir is a barrier to navigation. It stops navigation until the river rises to a considerable height over the top of the weir. With movable weirs there is no such interruption. As soon as the river rises to the height at which it is ordinarily navigable, the movable weir can be allowed to fall, and navigation is then unimpeded.

1842. Are not movable shutters liable to injury? I do not think so. They are very simple in their construction, and I believe would give less trouble than would be caused by the cutting away of the banks and the creation of new channels, which would be the result of the construction of permanent weirs.

1843. Would the expense of attending to the locks and weirs you propose be greater than the expense of attending to the locks and weirs Mr. Darley proposes? I reckon that it will be necessary to employ from one to two men at each lock and weir, according to the position. If Mr. Darley's scheme were carried out, one man would be sufficient for each place; but at the same time it might be necessary to employ 100 men for some months in repairing the mischief done by a flood.

1844. Mr. Darley stated that it would require four men to attend to each of your weirs? That is quite a mistake. It must be remembered that the Indian rivers are incomparably larger than the Darling. The Sutlej in flood would be some miles wide. The Godavari carries far more water than the Darling carries. Therefore, while fifteen coolies might be required to manage a weir upon one of those rivers, two would probably be sufficient on the Darling.

1845. Are you satisfied that the movable weirs you propose would answer all purposes, and not be much more expensive than those proposed by Mr. Darley? Yes; they would be less expensive in the end.

1846. Do you think that it would cost more to irrigate from the Darling than to irrigate with artesian water? If you could always guarantee the success of the artesian bore, and could obtain water at a moderate depth below the surface, irrigation by artesian water would be cheaper than irrigation by pumping. But, while the first is a purely speculative thing, the other is a certainty. You may put down three artesian bores unsuccessfully, whereas in irrigating from a river you have your water in sight, and know what difficulties you have to contend with. There is a good deal of gambling in connection with the putting down of artesian bores. The difference between the two systems is the difference between gambling and investment.

1847. Are there not artesian bores at Bourke? Yes; but there have been great failures in the neighbourhood of Bourke.

1848. Are you of opinion that the locking of the Darling between Bourke and Brewarrina will be of more advantage to the public than the construction of a railway from Byrock to Brewarrina? I think that the locking of the river is the more important work.

1849. *Mr. Hassall.*] Have you made any calculation as to the amount of water which will pass through the openings in your movable weirs during twenty-four hours? In regard to that matter, notwithstanding the objection taken by Mr. Darley, I have come to the conclusion that, if anything, it would be better to have a little more space between the shutters. You want to allow a certain quantity of water to flow down the river; but you could stop the flow very simply if you wished to do so. Upon the French rivers they simply stick down boards on the inside of the weir, over the joints, and the pressure of the water keeps them in position. I lately requested my assistant, who is in charge of the Bourke lock and weir, to ascertain what would be the best way of stopping this flow, and he reported to me yesterday that he thought it very likely that piping, such as gas-piping, would be as cheap as anything we could get, and would be the most durable and the handiest thing to deal with. Still the circumstances in which anything of the kind would be required will be very exceptional. The only year in which I have seen the river in so low a state as to require such an arrangement was 1885, though no doubt similar conditions have prevailed before.

1850. If the water were running very low, and there were every prospect of a continuance of the dry weather, it would be necessary for someone to be constantly supervising the arrangements for preventing the escape of water? An intelligent man in charge of the lock and weir would be able to do everything wanted. I consider that at the Bourke lock and weir it would be necessary to keep only one man.

1851. Would not something be needed to keep the boards from slipping to one side? I do not think so. The pressure of the water is constant, so that the boards would not be likely to slip. If they did, a man upon the spot would very soon put them right again.

1852. What would prevent the boards from rising? The boards would either have to be made of hard-wood, or they would have to be weighted near the lower end.

1853. Would you have a staff of men at each weir to raise the shutters, or would you have a barge to travel down the river, fixing each weir as you came to it? The idea was to have a barge at each weir, but I am not very sure that I will not be able to dispense with that. I have, however, allowed for a barge at each place—a rough barge with a winch on it. Still I may be able to dispense with that by using tackle connected with a wire-rope.

1854. Then it will be necessary to keep men at each lock? Yes. The number of times in a year that the weirs require to be moved is very small; perhaps not more than three or four times. In a place like Bourke the man in charge could easily procure whatever extra assistance he needed.

1855. Would there not be a danger of a sudden rise in the river bringing down a large quantity of timber, which would knock the weir out of shape? No, because the weir would be lying at the bottom of the river.

1856. But a rise might occur, and it might not be thought advisable to lower the weir, because there was no telling how high the fresh would be? Whenever notice comes of a considerable rise in the river—and the men at the weirs can obtain that notice days and even weeks beforehand—the weirs can be lowered to let the flood-water pass down. I do not think such a contingency would arise as damage being done to the weir by timber.

1857. There might be a sufficient rise in the river to bring a lot of timber on to the weir, but not sufficient rise to clear the weir? Very few moderate rises bring down timber. It is only when the river is in high flood that any considerable quantity of timber comes down. 1858.

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1858. A fixed weir would not be likely to be injured by such a thing? In a manner a fixed weir would be more dangerous, because there would be a greater probability of timber coming down and sticking on the weir, causing a serious obstruction, which would have to be promptly cleared away lest it should turn the channel of the river when the next flood came down.

1859. But would it not be easier to get rid of this obstruction where you had a fixed weir than where you had a movable weir? There is no risk of having an obstruction of this kind on a movable weir.

1860. That would depend a great deal upon the men who had to manage the weir? It would be looked upon as the first duty of these men to let go the shutters as soon as news came of a rise to a certain height at some place higher up the river.

1861. What great advantage is obtained by letting go the weir, that is, as far as navigation is concerned. You must impound a certain quantity of water to enable navigation to continue? With fixed weirs at 10 feet high, the river would have to be 6 feet over the top of the weirs, or 16 feet deep, before steamers could go down uninterrupted, whereas the ordinary depth required for navigation is only about 9 feet. With movable weirs, however, the shutters would be let go whenever the river reached its present navigable level.

1862. Supposing there were a sudden fall in the river? Such a thing is very uncommon.

1863. If a sudden fall occurred when the weirs were down, you might be unable to impound sufficient water to enable you to carry on navigation? I do not think that such a contingency is likely. The only case of a very rapid rise in the river that I know of occurred early in 1885, when 10 inches of rain fell in Wilcannia in about twelve hours, and almost the same quantity fell at Bourke. The river then rose rapidly until it was two-thirds bank high. That rise, however, was due solely to the local rains.

1864. An abnormal fall of rain sometimes occurs upon a particular watershed; for instance, a large quantity of water might come down the Bokhara, or the Birrie, or the Namoi. That will cause a sudden rise in the river, and the river might fall almost as rapidly, in which case, if you had all your weirs down, you might not be able to get them up again in time to save sufficient water for navigation? I do not think there is any likelihood of that.

1865. A movable weir must lose a certain amount of water by leakage? We purposely allow a certain quantity of water to flow through.

1866. But when the flow in the river ceases, what precautions can you take to preserve the water impounded by the weirs? I do not see that a movable weir is in any worse position in that respect than a fixed weir.

1867. But the movable weir leaks, and the fixed weir does not? One advantage I expect to get from having water stored in the river is, that there will be a better supply available below than there is at the present time, because the loss by percolation will be less. I might mention that, although the river has stopped running below Bourke, it has never stopped at Brewarrina, and I do not think it has stopped between Bourke and Brewarrina.

1868. I have known it to be dry on the Barwon and on the Namoi which are the two chief sources of supply? In 1885, it was very nearly dry at Walgett, and on the Namoi, but there was then a very fair stream running between the rocks at Brewarrina.

1869. Do you think it would be possible to impound any large volume of water in the ana-branches and cowals between Bourke and Brewarrina? In some cases it might be possible.

1870. Have you had a careful survey made? I have not had a complete survey of all the billabongs made, because it would be a tedious matter, and I do not think it is required at this stage. But in going up the river I noticed that the people holding the land had in places put small dams in the billabongs to prevent the water from flowing back to the river.

1871. Would it be possible to keep the water in by using flood-gates? Most of the billabongs run out at a very high level. Many of them will not run until the river is 20 feet deep or more. Cato Creek runs at a comparatively low level; but, so far as my recollection serves me, there must be 16 or 17 feet at Walgett before it will run. I know that there must be 23 or 24 feet before the Tarrion will overflow.

1872. Does that water come back into the river? In very high floods, part of it does. A good deal remains in the Tarrion.

1873. Are there any natural storage reservoirs along the river? There are places where water could be stored in considerable volume, and the flow back to the river stopped.

1874. What I should like to know is how you will provide against the waste from the weirs? 1885 is the worst year of which I have any record, and in that year the volume of water flowing past Brewarrina, although very small, would have been sufficient to keep up the navigation. I admit that there is something in the point you have mentioned, but you are looking to the case which I do not think would occur more often than once in twenty or thirty years. Lower down, towards Wilcannia and Menindie, the supply has failed more frequently.

1875. *Mr. Roberts.*] I understand that you have reconsidered the scheme which you originally put before the Committee? At the request of the Committee, I again looked into an alternative scheme, which I had considered before submitting this scheme. That scheme is shown on the plan before the Committee.

1876. You estimate that the alternate scheme will cost £108,000, as against £121,000, which was the cost of the original scheme? Yes.

1877. That saving has been brought about by doing away with one weir and lock? Yes.

1878. Do you feel satisfied that the new design would prove as satisfactory as the original design? It is perfectly practicable, but I proposed the other design because it was on more cautious lines.

1879. After consideration, you are prepared to recommend the alternative design? I believe that it would be a perfectly safe thing to carry out; but I prefer the original design, because I think it would be more easily worked.

1880. Have you good foundations for all the weirs? The foundations are good at Stony Point, Vincent's Rocks, and at Brewarrina, and fairly good at the site of No. 6 weir; but the foundations at sites Nos. 4 and 5 are indifferent, while the same thing might be said of the foundation at the site of the alternative weir.

1881. Your faith in movable weirs has been in no way shaken by Mr. Darley's evidence? Not in the slightest.

1882. Is it not a fact that, with fixed weirs, double the quantity of water can be impounded? No doubt, more water would be impounded if Mr. Darley's proposal were carried out, but I believe that in the end it would be found that the advantage had been very dearly bought, because I cannot help thinking that, in a river like the Darling, fixed weirs would be a constant source of danger and expense.

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1883. In what way? In a country like that, where the soil is very friable and easily worn away by the wash of the water, any permanent obstruction has a tendency to cause the river to cut out new channels. The opinion of Mr. Baldwin Latham, which I quoted to-day, bears out that remark. What he says as to the kind of country for which movable weirs are suited would apply to the Darling country.

1884. I think Mr. Darley said that his scheme could be carried out for £110,000. In comparing the cost of the two schemes I suppose you refer to the primary cost? No; because I anticipate that if Mr. Darley's scheme were adopted the floods would cause great damage, and that would necessitate extensive expenditure upon repairs.

1885. You said that fixed weirs stopped the navigation;—could not the shipping always go through the locks? Of course the locks could be used; but with movable weirs there would be no necessity for using the locks whenever the river was at its ordinary navigation level.

1886. I think Mr. Darley said that the expense of managing movable weirs and locks would be greater than the expense of managing fixed weirs and locks? A larger permanent staff would be required, but the movable weirs would be found more economical than the fixed weirs, because they would cause no obstruction to the flood-water. With fixed weirs you might occasionally have to employ 100 or 200 men to repair the mischief done by a flood.

1887. In flood time the shutters of the movable weir would lie on the bed of the river? Yes.

1888. They might lie there for six months? Yes.

1889. *Mr. Black.*] Did you ever know a flood to last as long as six months? Yes, in 1890, the flood-water stayed up for a longer period than that; but such a thing is exceptional.

1890. After the shutters had been lying at the bottom of the river for so long a period, would they be workable? I think so. We are taking every precaution by providing gun-metal bearings, and by having the iron work thickly painted to prevent rust. I do not think there would be any trouble in working the weirs.

1891. Have you seen these shutters in actual use? No, not exactly this kind of shutter. We worked with movable weirs in India, but we simply used drop-gates, such as I propose to adopt for the side bays with which I intend to regulate the flow of the river. The kind of shutter which I propose to use for the weir has come more into use of recent years, since I left India.

1892. *Chairman.*] Where are those shutters successfully used? They have come largely into use in America. I quoted an opinion of Mr. Vernon-Harcourt to-day in regard to movable weirs. He is one of the best authorities in England upon the subject, and he says that with the Pasqueau modification the working of the weirs is both safe and easily managed.

1893. *Mr. Black.*] I suppose the flood-waters are only likely to pick up timber when the river overflows its banks? Yes, as rule.

1894. If the bed of the river has been properly snagged, and the overhanging trees cut down, that will be so? Yes.

1895. Has that work been carried out on the Darling? I believe that the worst snags were taken out from this part of the river two or three years ago. I suggested that the work should be done while the river was low, and it was done by the Works Department.

1896. The timber picked up by the flood-waters would, in many cases, be intercepted by the standing timber before it got into the river channel? Yes; as a rule, there are trees pretty near the margin of the river, which would prevent timber from floating into the river.

1897. You propose to have five men stationed at each weir and lock? No; Mr. Darley, basing his opinion upon the Indian experience in a certain place, said that four or five men would be required; but I think that not more than two men would be required, and that near the towns, where extra assistance can be obtained, one will be sufficient.

1898. Would that number of men be able to minimise the risk of injury to the weir by guiding floating timber towards the bank? The quantity of timber coming down the river is not very great, except at times of extraordinary flood. I went down the river when it was more than three-fourths bank high, and the quantity of floating timber then was very small.

1899. You have made no reply to Mr. Darley's statement about the loss of water through the interstices of your weir? The point was referred to by Mr. Clarke, and I pointed out that these spaces would be left with the double purpose of allowing play for the shutters, and of letting a certain quantity of water flow down the river.

1900. What will the space be? We have allowed an inch between each shutter.

1901. You think that that is not having them dangerously close? I do not think so. I have been looking into the matter quite recently, and, as we are carrying out this work directly under the Government, I am not sure that we will not increase the space a little. I think that would give us greater power of regulating the flow of the river.

1902. Will there be no danger of the wood swelling? The swelling would be very little.

1903. Will there be no danger of the shutters canting? Not if they are properly put up, and properly worked.

1904. Is there no danger of two adjoining shutters warping, or of two shutters being thrown towards each other in such a way as to make it impossible to get them into line? I do not think so.

1905. Will it not require great exactitude of construction and great strength of material to prevent the shutters from getting out of position? No doubt they would have to be strong, and so they will be.

1906. Your objection to the fixed weir is that it must, under some circumstances, impede navigation? That is only one objection. I should not like to say that it is the main objection.

1907. What is your main objection? I think that the most important objection is that a fixed weir would cause erosion of the banks in places, and that thus there would be a danger of the river changing its course.

1908. Mr. Darley does not attach any importance to that view of the matter? Mr. Darley said that a fixed weir would not cause a rise in the flood-level of more than a few inches; but a rise of 1 or 2 inches in the flood-level of the Darling would have a serious effect in causing a scour. The banks of the Darling are composed of material deposited there by the river, and whenever the water has a greater velocity than it had when that deposit was made, the banks are likely to be eroded. Another matter arising out of Mr. Darley's evidence is the question of the construction of the dam at Menindie. I quite agree with Mr. Darley that that dam is very well constructed, considering the circumstances. When I spoke of it as a failure, I did not mean that that was the fault of those who constructed it; I merely referred to it as a case

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case in point in connection with the action of fixed weirs. The presence of that dam caused the cutting of a new channel. When I was at Menindie the dam was still in position, but a new channel had been cut which was quite as deep as the old one. That sort of thing is likely to occur wherever permanent weirs are constructed in the Darling.

1909. *Chairman.*] Is the Menindie dam as high as the top of the banks? Yes; and when a high flood occurred it covered the land round about.

1910. Mr. Darley said yesterday that the top of his weir would not be within 20 feet of the top of the bank. If the Menindie dam were level with the banks, a different state of things existed there from that which would exist if Mr. Darley's scheme were carried out? No doubt there is that difference; but the Menindie dam shows how easily a new channel is made. A very slight increase in the velocity of the flood-water will cause erosion. Of course the two cases are not quite parallel.

1911. *Mr. Black.*] What was the height of the Menindie weir? From 15 to 18 feet.

1912. *Chairman.*] How high are the banks there? The weir was constructed in an outflow channel from the river to Lake Menindie.

1913. Did the dam go right up to the top of the banks? Yes; and the whole country was overflowed. Some slight cause directed the water into one particular channel.

1914. *Mr. Black.*] A new channel was formed there? Yes.

1915. Could not that have been prevented by having a sort of by-pass? It is a very difficult place to make a dam of any kind. The difficulty could be got over by having a wide overfall weir; it would be a very expensive matter.

1916. *Mr. Humphery.*] How many shutters will be in each of your weirs? From thirty to thirty-five.

1917. Thirty-five openings of 2 inches each are equivalent to an opening of more than 6 feet? Yes.

1918. Would not a very large body of water flow through an opening of 6 feet? Yes; but we shall want as large an opening as that in ordinary conditions of the river. When the river is 3 or 4 or 6 feet above summer level we should not only want that opening; but we should also have to allow a considerable volume of water to go through the side bays.

1919. Would not that seriously diminish the impounded water? It takes a flow of something like 1,400 or 1,500 cubic feet per second to keep the river at navigation level, and a considerable opening would be required to provide for such a flow as that.

1920. At all events, you have considered the matter? Yes. If we increase the size of the openings, it will be principally to let a larger quantity of water pass through.

1921. Would it not be necessary to make provision for stopping that outflow upon occasion? Of course, when the supply in the river was getting low, we would gradually close the side bays, and we could also close a few of the openings in the weir.

1922. In the joint report of yourself and Mr. Ward, it is mentioned that the cost of dredging the Darling was estimated by Mr. Darley at about £250,000;—will it be necessary to expend any money in dredging the river between Brewarrina and Bourke, in order to give effect to your scheme? There are a few places where we should have to take a little off, but they are so very few that the matter is hardly worth taking into account. There is one place a short distance below Brewarrina, and another a short distance below Vincent's Rocks.

1923. The matter is not of sufficient importance to render it necessary to make special provision in your estimate? No.

1924. Mr. Darley allows £25,000 for repairing the banks between Wentworth and Bourke? I do not anticipate that any expenditure of that kind will be necessary between Bourke and Brewarrina.

1925. Do you think that your estimate is ample? Yes.

1926. *Mr. Trickett.*] Mr. Darley seems to think that a scheme of this kind, having regard to its probable cost and the revenue that would probably be derived from it, is premature;—what are your views upon the subject? I do not think that it is premature. I do not think that it was premature when Mr. Darley made his report. If the Darling is to be opened up, it will be by works of this description.

1927. Then you would look upon this as a national work, not as a revenue-producing work? I do not anticipate that the chief benefit derived from the scheme will be the revenue directly returned by it. I anticipate a much larger indirect benefit.

1928. What revenue would be derived from the whole traffic upon the Darling in one year from Brewarrina to Wentworth? I have no direct information upon that point.

1929. Mr. Darley says that he found from the Sub-collector of Customs at Wentworth that in 1888 the whole of the tonnage going down the river only amounted to 12,000 tons;—do you know how much of that traffic would go along that part of the river affected by your scheme? I think that Mr. Shainwald has given you the details of the traffic on that part of the river.

1930. Will not the water which runs away through your weirs greatly impoverish the supply available for irrigation purposes? Not at all. Under any circumstances it would not be allowable to stop the water entirely. If permanent weirs were constructed, the surplus water would flow over the top, instead of going through the interstices of the weir, as with movable weirs.

1931. But with permanent weirs the water will only flow away when the river is higher than the tops of the weirs, while with movable weirs it would be always running away? Yes; we would allow it to go through. I would point out that such weirs as we propose to construct could be constructed without any change in the law affecting riparian rights, and the rights of navigation. But if permanent weirs were constructed, I think that, as the law stands, anyone could destroy them.

1932. Might it not happen that more water was running through the interstices than was coming into the river? That could be regulated. First of all the side bays could be gradually closed, and then, if necessary, some of the spaces between the shutters could be closed by sliding down boards in front of the weir.

1933. Is that a known mode of dealing with these weirs? Yes; it is the simplest way of stopping the flow. A man would simply have to go along the front of the weir in a boat, and slide down the boards wherever they were required.

1934. Have you had a general survey made of the country surrounding this stretch of the river, to see how the water will flow there? I have had levels taken on both sides of the river, and I do not think there would be any difficulty in finding suitable places for starting your irrigation operations; in fact, people have found them already. They are already irrigating there on a small scale.

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1935. Are you able to say definitely that if the water were pumped from the river it would flow over the adjacent land? Yes, if proper sites were selected. There is a great deal of flat land there which would not be suitable for irrigation. Not far from where the Macquarie runs in there is a great deal of country which could not be satisfactorily irrigated, because of the risk of its becoming swampy.

1936. How would you deal with that kind of country? I should not attempt to irrigate it. It would be quite sufficient to irrigate the land that was suitable without taking the water on to land that was unsuitable for irrigation.

1937. How do you get the water to flow over the ground which you wish to irrigate;—does it not soak in very fast? On some grounds you lose more water than upon other grounds, and some kinds of channels will lose more water than other kinds of channels. The channels which they made at Mildura lost an enormous quantity of water. They were very shallow, very wide, and the slope was very small. Those are all bad points from an economical standpoint.

1938. Do you keep on irrigating whether the weather is fine or wet? Certainly not. A great deal of judgment must be exercised, because mischief may be done by irrigating land just before a heavy fall of rain.

1939. Would not the drains sometimes carry water and other times allow it to soak through, according as they were being used or not? Yes.

1940. Is not that a great disadvantage? That must be expected, because the channels are not in constant use. Where they have large irrigation works, as in India, the distributories run constantly throughout the year, except during the four or five weeks in which they are being cleaned, and the people on either side are allowed to take the water for so many days at a time. The channels in the fields are not constantly running.

1941. Have you instanced any places where irrigation on a large scale is being carried on by the Government? All the large irrigation canals in India were constructed by the Government.

1942. And anywhere else? The Government have done something in Italy, but not very much.

1943. Is not all the work in America done by private enterprise? Yes, but the people there get very extensive rights, which they do not get here.

1944. What kind of rights? In some of the American States a man holding land fronting a river is allowed to take as much water as the irrigation of his land requires, and under that system the frontages are very quickly taken up.

1945. But their rivers are very much larger than ours, so that the Government could afford to grant such rights there? If the first settlers upon the Murrumbidgee had been able to obtain their land for 5s. an acre, and to take as much water as they liked from the river, a great deal of irrigation would have been done there. In America, people can get land for 1½ dollar per acre and the right to take as much water as is required to irrigate their land, and thus private enterprise is stimulated.

1946. I suppose the water would be conveyed along flumes from the river? In many cases it is pumped. Of course large works have been constructed for the purpose of bringing the water on to the ground by gravitation wherever that is possible.

1947. One of the large American flume companies stated before the Water Conservation Commission in 1885 that the minimum charge there was 5 dollars per acre per annum;—is not that a very great deal? Yes, but that is where the right to water has been sold by the original holders, and great troubles have arisen from that cause. Certain companies have acquired extensive water-rights, and they sell or lease the water to other people.

1948. *Mr. Black.*] It would be possible for a company to buy out the water-rights of all the people on the river frontage? I believe that it would.

1949. Has that ever been done? I do not know; but very large monopolies have been created which have given rise to a great deal of trouble.

1950. Then you would think it inadvisable for the Government to bestow or sell the absolute right to raise water from the river? I think it would be quite right for the Government to let such rights upon equitable conditions.

1951. I said to sell or bestow an absolute right? No, it would not be wise.

1952. *Mr. Trickett.*] You do not think that every farmer would have to erect his own pumping plant? No, it pays much better to have a large pumping plant, making an equitable charge for the distribution of the water.

1953. Have you considered what this charge should be? Yes, I have given it a good deal of attention. In that part of the country if you irrigate you get a crop; but if you do not irrigate you get no crop. Therefore, it would sometimes pay to give a considerable amount for the water.

1954. An officer connected with the Department of Mines told us that although there are a great many bores in this district the water is very little availed of for irrigation? I think that that is largely due to the want of information, and of enterprise on the part of the people.

1955. Is it not the duty of the Department to let the people know that the water is available, and to educate them as to its use? So the Department does, in season and out of season.

1956. And yet they will not take the water? I think that a large number of these people do not read much, and do not trouble themselves about the matter. While in America the tendency has been to stimulate irrigation in every possible way, here the tendency has been to keep it back.

1957. It has proved of advantage in America to have water-distributing companies? Yes, it has led to a very remarkable development of the Western States.

1958. Do you know whether these companies are prospering? Many of them are. The way in which the land has been rushed, even in the very out-of-the-way places, shows that the undertaking must be decidedly profitable.

1959. A gentleman connected with the Department of Agriculture said that millions of people would settle in this district if irrigation works were started there? I must confess that the very slow way in which the people have taken to irrigation, even where they had water at their very doors, has been a source of great disappointment to me. If we had a little of the enterprise of the American people, things would be different.

1960. *Mr. Lee.*] You object to fixed weirs because of their tendency to cause not so much the erosion of the banks as the cutting of new channels? Yes.

1961. The proposed shutters are about 11 feet long? Yes, about that. In some cases a little more.

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1962. What would be their height in a straight line from the bottom? A little over 10 feet.
1963. Mr. Darley's fixed weirs would be 10 feet high? Yes.
1964. Would there not be the same danger of new channels being cut if your weirs were constructed as if Mr. Darley's weirs were constructed? No, because in flood-time the movable weirs would be lying on the bottom of the river.
1965. What causes the cutting of channels—an increased height of water or an obstruction under water? To a certain extent, both. The flood-water would be obstructed by fixed weirs, because a certain amount of the section of the river would be taken up by the weir. A slight increase in the height of the flood water increases its velocity.
1966. With the permanent 10-foot weir the water would flow freely directly it rose to the top of the weir, but it would have to be 2 feet over the 11-foot shutters before the shutters would feather? Yes; but the erosion of the banks would take place, not when there were only 12 or 14 feet of water in the river but when there were 30 or 40 feet.
1967. If there were 40 feet of water in the river, would it signify what kind of weir you had? That when I think the presence of a fixed weir would have an effect upon the banks.
1968. What is your opinion as to the danger of steamers striking on your weirs in flood-time? There would be no danger, because in flood-time the steamers would be able to go over the weirs.
1969. Does your objection to fixed weirs apply only to fixed weirs in the Darling or to fixed weirs generally? It is an objection which applies, as Mr. Baldwin Latham has put it, in all flat country where rivers are liable to overflow their banks. In a country like the Darling, where the banks are easily eroded, the objection applies very strongly.
1970. Are your proposed locks and weirs inseparable? Not absolutely. For instance, the alternative lock is put in the head of a coveal, while the weir will be in the river channel.
1971. But you consider it advisable to retain the original arrangement at other places? Yes.
1972. Still you do not adhere to it as a rigid principle? No.
1973. You agree with Mr. Darley to some extent? Yes; it is not absolutely necessary that the locks and weirs should be placed alongside each other.
1974. You do not anticipate the danger to steamboats which Mr. Darley thinks will result from your arrangement? No; I do not see that there would be any danger with movable weirs. The arrangements for the working of the weirs will include the stretching of a wire rope across the river immediately above the weir, and this will act as an additional protection to the shutters.
1975. If it were found on further examination that it would be advantageous to still further separate the locks from the weirs, you would be prepared to make the change? I think that, as a rule, it would be objectionable to make a change. If there were special cases in which it would be advantageous, it could be done; but, speaking generally, it would be better to have the locks and weirs together.
1976. You propose to save £40,000 by taking away two of the locks and weirs, and to spend £27,000 in substituting a larger lock and weir? Yes.
1977. *Chairman.*] Would a lock in the neck of a bend be as safe as a lock in the channel of the river adjoining a weir? Speaking generally, it would not.
1978. Is there an insuperable objection to putting locks in the neck of a bend? No; but having seen the Darling in high flood, I came to the conclusion that it would be objectionable to put the locks in the necks of bends.
1979. Have you any information with regard to large and successful irrigation enterprises where the water has to be pumped to a height of 35 feet? I know that has been done, but I have not been able to lay my hands upon any details.
1980. Can you furnish us with the information? I will try to do so.
1981. Would £6,000 be a fair estimate for a 10-foot fixed weir in the Darling? I think that a fixed weir could be constructed there for that amount.
1982. Five such weirs would cost £30,000, and would conserve enough water to irrigate 12,000 acres;—that being so, it may be assumed that enough water to irrigate 1,200 acres could be conserved at an expenditure of £3,000;—1,200 acres is the area of land which could be irrigated by the water supplied from the Pera Bore; but to raise that quantity of water from the Darling would cost £5,400;—adding to the cost of conserving the water £3,000, the cost of pumping it £5,400, you get a total cost of £8,400, which must be put on to the capital value of the 1,200 acres irrigated, allowing nothing for the cost of distribution and maintenance;—that would mean a capital value of £7 per acre? There is not the slightest doubt that a successful artesian bore gives a cheaper supply of water than you could obtain from the river; but you do not get successful artesian bores in all parts of the country.
1983. The cost of the Pera Bore was, approximately, £1,400, therefore, on the calculation I have just made, to irrigate 1,200 acres with river water would cost £8,400, while to irrigate the same area from an artesian bore would cost £1,400? Yes; but you must remember that you might put down four or five bores unsuccessfully. In making a comparison of this kind, consideration ought to be taken of the cost of unsuccessful bores.

WEDNESDAY, 17 JUNE, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHRY.  
 The Hon. CHARLES JAMES ROBERTS, C.M.G.  
 The Hon. WILLIAM JOSEPH TRICKETT.  
 HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.  
 JOHN LIONEL WEGAN, Esq.  
 THOMAS HENRY HASSALL, Esq.  
 GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

George Colquhoun, Esq., Crown Solicitor, sworn, and examined:—

G. Colquhoun,  
Esq.

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1984. *Chairman.*] I believe you have a statement to make to the Committee with reference to four questions which have been submitted to you, and upon which the Committee would like to have your opinion? The first question which I have been asked to answer is, to give a definition of the rights of the Crown, and of the private individual, in the waters of the Darling. I apprehend that that question involves the consideration, to a very great extent, of the rights of the Crown with reference to the water running down the rivers of the colony, and which find their way to the sea, either through outlets on the east coast of the colony, or, by way of the River Murray, through South Australia. I think it is generally known that, so far as tidal rivers are concerned, the property in the soil of those rivers is vested in the Crown. No doubt the owners of private lands bordering such tidal rivers have certain riparian rights, which may be governed by a variety of circumstances arising from conditions of time, locality, necessity, and many other things. For instance, in a recent case in the English courts, where a person claimed to be entitled to a wharf in the River Thames, and to have that wharf jutting out into the river, it was held that the Fishmongers' Company, in erecting their premises, could not be permitted to interfere with that wharf, or with the approach to it. With regard to tidal waters, it may be said generally that the property in the soil underlying them vests in the Crown absolutely. In non-tidal waters, the owners of adjacent land are entitled to the soil under the water as far as the middle of the stream. I am speaking now of the law of England, and I may mention in passing that the English law knows no right of property whatever in water, but only the right to use water; for it stands almost as a matter of reason that there can be no right of property in a thing which is here this minute, and may be 100 miles away soon after. That is the position which obtains in the old country, and it goes so far as this, that a proprietor owning land on each side of a stream has upheld his right in the courts to erect a pier in the middle of that river for the purpose of carrying a bridge over it to connect his works on one side with the railway on the other. In such a case it was decided that the owner was entitled to erect a pier in the river, and to put a bridge over the river, so long as he did not interfere with the general rights of others to navigate the stream. This leads up to the question, "What are riparian rights?" I think that riparian rights may shortly be described as the rights of owners on either side of the stream to use the water passing by them, and to insist that that water shall continue to flow past their land in the same volume as it would flow by if the river were in its natural state. Owners of land upon the banks of a stream are permitted to take water from the stream for their domestic use, and for the use of cattle owned by them. I do not mean to say that such an owner would have the right to divert water for an irrigation scheme to supply feed for 10,000 head of cattle; but he would be permitted to draw sufficient water to provide for any cattle he might require for domestic purposes. There are other rights that a riparian owner may have. He may divert the water for, say, the use of a mill, so long as he returns it to the stream again in such a way that others lower down may receive it in due course. It must be borne in mind that, wherever a river is navigable, though not necessarily a tidal navigable stream, the right to use it for purposes of navigation belongs to every individual in the community. Any person is entitled to take a boat down every navigable river in England, and every river in this country which is capable of carrying a boat is, as it were, a water highway, which every member of the community has the right to use. This right is not to be obstructed by any one, either by a private owner on either side of the stream, or by the Crown. I say "or by the Crown," for this reason; the Crown is the trustee of all navigable rivers, for the benefit of the public generally. Having mentioned what riparian rights are in England, it may, perhaps, be as well to mention a very serious doubt which arises in this colony from the circumstances connected with our rivers and the surrounding properties. I think an exaggerated notion has gone about that every person who owns land bordering upon a stream has by law—he certainly has not *ex necessitate rei*—a right to the soil up to the middle of the stream. It has generally been supposed that that is a universal and irresistible position; but I venture respectfully to submit that it is not. I think that if the position is thoroughly examined, it will be found that, in several instances, it has been entirely ignored by the English Courts, and it should be ignored here to a greater extent, because of the nature of our rivers. The proprietors of land adjoining a river have the right to navigate that river; but I do not think they have an absolute right to the soil up to the very middle of the stream.

1985. *Mr. Trickett.*] Would you regard the river Darling as a navigable stream? It is capable of navigation. There are a good many differences of opinion as to the meaning of the word "navigable." Some people consider that a river is only navigable if it is flowing; but I think that any stream is navigable which is capable of carrying a barge or vessel of any kind. In my own mind I have no doubt as to the Darling being a navigable stream.

1986. Did not the case of Lord *versus* the Commissioners of Sydney decide the point that owners of adjacent land have a right to the soil as far as the middle of the stream? No. In that case, which is reported in 12 *Moore P.C. Reports*, the Privy Council, I think, did not decide whether the owner had a right to the soil as far as the middle of the stream.

1987. I thought that case decided that if a river were a navigable river, and also one in which the tide ebbed and flowed, the owners of adjacent land were entitled to the soil up to the middle of the stream? I think the Privy Council avoided that point. The case was capable of being decided on other grounds, and was, I think, so decided. The second question is as to how this colony will be affected by draining from the rivers in adjoining colonies? I confess to not being quite capable of understanding the exact meaning of that question.

1988.

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1988. What the Committee want to know is, how this colony would be affected, if, by using great quantities of water for irrigation, we diminish the flow of water in rivers passing down to another colony? Supposing you were to erect a weir and construct irrigation works which would deprive those below of a large quantity of water, how would you be affected? With regard to riparian rights, the owner of land adjoining a river is entitled to have the usual volume of water passing by his place without diminution; but you cannot test that question in the same way where the rivers are continually liable to floods, and I think that the definition would have to be considerably modified to meet the circumstances of this colony.

1989. *Mr. Black.*] The owner of land adjoining a river is entitled to have the same quantity of water passing by his ground each year? No, not each year. He is entitled to the natural flow of the river. That might be 100,000,000 gallons a day one year, and only 1,000,000 gallons a day another year.

1990. Of course, the owner of land adjoining a river suffers no infringement of his rights if there is a natural cessation in the flow of the river; but would he have any cause of complaint if you artificially regulated the flow? Such a regulation of the flow might be beneficial to him, because a regular flow would be better than a flood at one time, and only a trickling of water at another? I said that a person owning a mill was entitled to the water from the stream for the use of the mill, provided he allowed it to flow back to the stream again.

1991. If the Government by the construction of locks and weirs hold back the flood-waters of a river, liberating them so as to cause a nearly equal flow all the year round, will those living lower down the stream have any cause of complaint? I think that if a dam were erected, either by private individuals or by the Crown, which, to put an extreme case, actually impounded the whole of the water, it would be an interference with the riparian rights of people lower down the stream. That really answers the question. It is all a matter of degree.

1992. *Chairman.*] We want to be clear as to whether it is necessary to come to any arrangement with any of the other colonies before taking water for the purposes of irrigation? I do not see how we can interfere with the neighbouring colonies. If we impounded water immediately upon the border line, they might say, "You may do this in your own colony, but we will not allow you to do it here." I do not suppose that such a question has ever arisen. I do not remember ever coming across any cases of the kind before.

1993. If New South Wales took large quantities of water for irrigation purposes, she might interfere with the supply required for the South Australian irrigation colonies? I do not know that I shall be right in saying, first come first served, but I think that we have the first legal right to use the water. Cases of this kind have occurred in England. The first occupant of certain land has been in the habit of taking a certain quantity of water out of a river, and people coming afterwards have interfered with his doing so; but this interference has not been permitted, although the second comers have an original right to take the same quantity of water from the stream as is taken by the first occupant. I think I am right in saying that there have been cases of that kind. I apprehend that your question means this: Has the Crown the right to impound up into a large lake a quantity of water which might be serviceable to the other colonies, but without interfering with the rights of the owners of land in this colony? In reply to that I say that I think we have the right to do what we like with our own. I do not think we are bound to consider the position in which a neighbouring colony, hundreds of miles away from the scene of operations, will stand if we impound a large quantity of water at a certain point. If an objection were raised by an adjoining colony, no one could say exactly what were the sources of supply which furnished water to that colony. We may catch at a certain point all the water that is given to us there, and so long as we permit the people in our own colony living along the banks of any stream in which water has been impounded to have the proper natural use of that stream, I do not see that there is any legal reason why we should not impound the water.

1994. *Mr. Trickett.*] Does not the principle apply that no one has a right to use the water flowing in a stream to the prejudice of another, either above or below him? If those who had a right to the use of such water dammed up the water to such an extent as to cause it to flow over the lands of a stranger, that stranger would have a right of action. But that right of action would accrue apart from the right of using the water. He would be injured by misuse of the water.

1995. If it is a misuse to throw water back in the way you describe, is it not equally a misuse to prevent it from flowing past land lower down the stream, or to diminish the volume that would naturally flow past such land? I have already said that the proprietor below is entitled to have the quantity of water flowing past his land that would flow past it under natural conditions. I do not mean to say that any one has the right to catch surplus water and throw it on to his own land to the detriment of another private owner. I am sure that no one has that right. I am speaking of the Darling River, and of the right to utilise the water of that river for irrigation purposes. If the work of irrigation is to the prejudice of any private owner, the consent of that private owner must be obtained, or he will have ground for complaint—that is, unless legislation steps in. Of course, if all the land is Crown land, there will be no private owner to contend with. If, in impounding the water, you somewhat reduce the volume of the flow, the amount of injury that is done may be merely nominal, and cases of the kind have arisen in England in which merely nominal damages have been given. It is merely *injuria sine damno*.

1996. The Committee is considering a scheme for locking the Darling so as to improve the river for navigation, and to allow the water in it to be used for irrigation purposes. Do you think that legislation would be necessary to give the Crown the right to carry out such a scheme? I think there should be some authority. It would, perhaps, be a little dangerous to take such action without legislative authority. When they wanted to conserve the Thames, they had to go to Parliament for authority to do it. I certainly think it would be advisable to get Legislative authority for this work, and then any plaintiff would find it rather difficult to substantiate a claim against the Crown.

1997. Were you consulted about the Water Rights Bill now before Parliament? No, and if I had been I should have declined to advise, because it is no part of the duty of the Crown Solicitor to advise upon such matters.

1998. Do you care to give an opinion upon it? No. I might perhaps give a wrong opinion, and I might afterwards have to sit in judgment upon such an opinion.

1999. You were not consulted in regard to the Bill, and you do not wish to give an opinion upon it? No. In this country it is very doubtful whether our grants permit the owners of land adjacent to a river to own the soil as far as the middle of the river in every instance.

2000. In Victoria they generally make some reservation in favour of the Crown? The tendency of our early grants was not to give the soil as far as the middle of the river. I have known grants in which 100 feet frontage has been reserved, even at Armidale. The next question I was asked was to give a *précis* of the

the legislation upon the subject of riparian rights in vogue in other countries where irrigation is practised, and to state the scope of the rights of the Crown and of the private individual in this regard. This is such a wide order, that I am unable to accommodate the Committee in regard to it. We know very well that there have been disputes in connection with some of the large rivers in America. In connection with the Mississippi, for instance, there was a dispute between the United States Government and the Spaniards; but that was rather as to the right of navigation than of irrigation. There was no question as to the right of persons to go up the stream: but disputes arose as to the manner in which navigation was to be carried on. These disputes were settled by convention. Again, on the St. Lawrence, a similar dispute arose. There the right of navigation was admitted; but there was a dispute as to the mode in which it was to be carried on. I think it would be impracticable to ascertain the laws of the different nations in respect to riparian rights. There are a good many laws governing the riparian rights of people on the Rhine, and on a good many of the rivers in France; but I do not think a knowledge of them would be of any use to the Committee. I have not been able to satisfy myself about this matter, because I have not the necessary books to look into, nor have I had the time to consider such a very large question. Anyone who wants to study the question at all will find an excellent chapter in "Wheaton's International Law," which deals with it. The last question was,—What are the claims, if any, sought to be set up by the adjoining colonies with respect to the Murray River. I think it is generally well known that the Constitution Act defines the boundary of the colony of New South Wales as being on the southern side of the River Murray. That is a geographical boundary, and it brings the waters of the Murray within the territory of New South Wales; but, inasmuch as the Murray is for many hundreds of miles a navigable stream, I do not think that the right of navigation is taken away from the inhabitants of South Australia, or from the inhabitants of Victoria. The question as to the mode in which they may navigate it of course arises, just as it arose on the Mississippi. The question was first raised somewhere about the year 1860, in connection with the imposition of border duties. On the 4th August, 1864, a letter was written by the Chief Secretary of Victoria to the Colonial Secretary of New South Wales, in reply to a letter from the latter to the former dated the 8th June, which bore solely upon the establishment of border duties. The Chief Secretary of Victoria, in the letter to which I refer, expressed his "regret that in seeking the assistance of this Government in the matter of Customs duties on goods crossing the Murray into New South Wales, your Government should have embarrassed the subject by raising for the first time the larger and more important question of the control of the river, and denying the right of Victoria to the free and unrestricted use of its waters for her own commerce." That led to a variety of correspondence, and ultimately, a deputation came from Victoria about the matter. Some agreement appears to have been entered into on 15th April, 1865, when there were present as representing New South Wales the Hon. Charles Cowper, the Hon. John Bayley Darvall, and the Hon. Thomas Ware Smart; the Victorian representatives being the Hon. James McCulloch, the Hon. Archibald Michie, and the Hon. George Verdon. It was then unanimously agreed that certain articles should form the basis of an agreement between the respective Governments of New South Wales and Victoria, the first of those articles being in these words, "The Government of New South Wales does not contend for exclusive jurisdiction over the waters of the Murray." Looking through the papers I do not see that there has been any further question in regard to the matter, except with reference to the ownership of two islands in the Murray near the South Australian border. These islands had been for some considerable time claimed by Victoria, and Victoria was receiving the rent for them. On the matter being brought before the Government of New South Wales, a survey was made, the result being that the islands again became New South Wales territory, it having been proved that the southern branch of the river was its main bed.

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2001. That declaration would not affect any question of boundary? No. The Chief Secretary of Victoria only wrote about the denial of the right of Victoria to the free and unrestricted use of the Murray for our own commerce. My impression is that, under the rules of international law, Victoria has a right to use the Murray for her own commerce; but not to the detriment of this colony. That is how the question arose about the border duties.

2002. You think that Victoria has an absolute right to use the Murray? I do; but not to use it in such a way as to interfere with our fiscal arrangements, or anything of that kind. For instance, if Victoria purposed invading Queensland, she could not bring her army over the Murray without our consent.

2003. Has Victoria the right to take water from the river? I do not think that we need trouble ourselves about that, though it might affect South Australia.

2004. I judge from your remarks that anything done by this colony in the way of locking the Darling is not likely to cause claims for compensation to be made by the sister colony of Victoria? I do not think that any such claims will be made by the sister colonies.

2005. I understood you to say that people living on the banks of a river have a right to use the water for themselves and for their stock? Yes; that is such stock as they employ for domestic purposes. I do not mean all the stock running over one of the large leasehold areas that we call stations.

2006. That is their only right? Yes, I think so.

2007. Do you think they have the right to take water for irrigation purposes? No; if that right were conceded to them, they would be able to divert the river by means of flumes, to convey the water to some distant part.

2008. Seeing that their riparian rights are of this limited character, do you think that this proposed scheme would give the people on the river any claim for compensation? I think it is possible that they might have some claim, but as to the extent of that claim I should not like to speak.

2009. It would be very small? Yes, without any actual damage.

2010. Although the claim might be created, it would be so small that it would not be advisable to press it? I do not think it would be advisable to allow any such claim to be made. If there is any likelihood of the claim being made, the Crown should be protected. The Crown is only the trustee of these waterways, and as a trustee it should be protected.

2011. Therefore, some protective legislation should be passed before we enter upon any large scheme of the kind into which the Committee is now enquiring? I think that some such legislation should be passed before any work of the kind is entered upon.

TUESDAY,

TUESDAY, 21 JULY, 1896.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.	HENRY CLARKE, Esq.
The Hon. CHARLES JAMES ROBERTS, C.M.G.	CHARLES ALFRED LEE, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	JOHN LIONEL FEGAN, Esq.
FRANCIS AUGUSTUS WRIGHT, Esq.	

The Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Alexander Oliver, Esq., M.A., President, Land Appeal Court of New South Wales, sworn, and examined:—

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2012. *Chairman.*] I understand that you desire to limit your evidence to the question of riparian rights? Yes. The first point upon which I understand the Committee wish information is the international aspect of this question. The Murray, as I daresay the members of the Committee are perfectly well aware, has been specifically handed over to New South Wales by the Constitution Act, therefore, there is a broad distinction between the intercolonial rights *quoad* the Murray, and *quoad* the Darling. The Darling is a tributary or affluent of the Murray, and no Imperial legislation has been passed which affects it. For that reason I think that we have a freer hand in dealing with the Darling than in dealing with the Murray; in fact, in my opinion, our hand is absolutely free with regard to the Darling. I do not think that it is possible that South Australia, which is the only country that might be affected by works on the Darling, could be seriously injured by such works, because the volume of water pouring down the river must be so immense that it would be practically untouched by any irrigation scheme, though this is a matter for an expert to give evidence upon rather than for me to speak of. Of course, if there were a drought simultaneously in Queensland, New South Wales, Victoria, and the lower part of South Australia, the flow of water in the Murray—say, at Renmark—might be appreciably diminished; but no such drought has ever yet occurred.

2013. You are of opinion that the supply of water in the Darling is so ample that it is not likely that friction will arise between the colonies in regard to irrigation, and that therefore New South Wales will have no need to fall back upon any rights of possession which she may have? Yes. Then, too, it would be quite impossible to say how much South Australia was injured, if at all, by the taking of water from the Darling, because she gets her supply from the Murray after the Darling has flowed into it. I mentioned Renmark because there is an irrigation colony there, which is vitally concerned with the height of the water in the river. I do not think that there could ever be any difficulty with South Australia because of any works carried out on the Darling. However, as I said before, I am no expert upon these matters. With regard to the legal question, that is a very different thing. I take it to be the law that the whole of the water-course of the Darling legally belongs to New South Wales, and that this Colony has the entire right and control over the waters of the Darling. But if there were any sensible diminution of the water flowing past a place in South Australia—say, Renmark—or any pollution of that water, it might be held, on principles analogous to the principles underlying the ordinary common law, that South Australia had cause of complaint. I make that remark on the assumption that the people of a State in the aggregate have riparian rights analogous to those possessed by private individuals; but in all parts of the world with which I am acquainted, any difficulties arising in this way have been settled by convention.

2014. *Mr. Trickett.*] There was a convention about the Murray once? There was an attempt at a convention, but I do not know that it ever came to anything. We had trouble with Victoria in connection with her border duties, and also in connection with Pental Island. I do not think that the Pental Island difficulty ever went to the Privy Council as an appeal of law; it was the subject of arbitration here. Sir John O'Shaughnessy was the Victorian arbitrator, and Sir Edward Deas-Thomson was the arbitrator for this Colony, and the Privy Council decided that Pental Island belongs to Victoria, apparently upon the evidence that the channel between Pental Island and Victoria was only an ana-branch and that the real bank of the Murray, and therefore the boundary of Victoria, was the shore of Pental Island which fronted New South Wales. Whenever in other parts of the world difficulties of this kind arise, the usual way of deciding them is by convention. Such conventions have been held in the States of America, in Europe, and in every part of the world.

2015. *Chairman.*] In your opinion, when the whole of these colonies deal with these matters in conference, there will be some recognition of inter-state obligations? Yes; at the same time I wish to say that, so far as I know anything of the international law on this subject, the whole control of the Darling belongs to this Colony, and her right could not be challenged. That is all I have to say about the Darling in regard to the international aspect of this question. Other points may arise with regard to the Murray, Dumaresq, and the Macintyre. With regard to the riparian rights of the holders of land upon the Darling I have had sent to me the evidence of the Crown Solicitor. I have read that evidence, and, as I do not wish to express opinions here which are not supported by the highest authority, I have made some extracts from the reports of cases decided by the Privy Council, the House of Lords, and other courts of high authority. While I have the highest opinion of the Crown Solicitor as an accomplished lawyer, I would point out that he came before the Committee as the Crown Solicitor, and as Crown Solicitor he was concerned in conserving all possible rights of the Crown. Therefore I apprehend that it is only right and fair that his evidence should be considered in that light. I am under no such obligation or "official equation," that I am aware of. In the first place, when Mr. Trickett asked Mr. Colquhoun about the case of *Lord versus the Commissioners of Sydney*, I think that that gentleman was under a wrong impression as to what that decision was. For the past twenty years I have paid much attention to these matters. I do not know that I am a specialist. In the English law—I do not speak about the American law—there is not much to collect which is physically applicable to our special conditions.

2016. *Mr. Trickett.*] What do you consider to be the rights of the owners of land on the banks of the Darling? That raises the very serious question, whether the owners of land adjoining a river which is not affected by the tide, but which is subject to public rights of navigation, can avail themselves of the common law presumption, and are entitled to hold *usque ad medium filum aquae*. That is a point which has never been determined judicially, so far as I know, in this Colony with regard to non-tidal but navigable rivers,

rivers, though it has been with regard to highways. The nearest approach to any decision upon the subject is in the case I have already quoted—Lord *versus* the Commissioners of Sydney. That case decided—and there is no doubt of this—that in regard to a non-navigable, non-tidal stream the holder of a Crown grant took with it ownership of the soil under that stream, *ad medium flum*. What the Privy Council would not decide, and what the Crown Solicitor probably had in his mind, was whether riparian rights depended upon ownership of the bed of the creek or only upon ownership of the land as far as the bank. The Privy Council would not give a ruling upon that point because it was not necessary for the decision. They were of opinion that by its language the grant itself carried with it ownership of the land to the middle thread of the stream. That case, however, only determined the law with reference to non-navigable, non-tidal rivers. Now we have to do with a non-tidal but navigable stream.

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2017. Did not the decision in Lord's case lay it down that the river must be non-navigable, and not subject to the ebb and flow of the tide? That was not laid down as part of the principle of the decision; but those were the facts, and there may always be an attempt to distinguish that case from any concerning a river such as the Darling. The facts were that the stream was non-tidal and non-navigable; but is the law applicable in that case applicable where the stream is non-tidal but navigable? The Privy Council in its decision, which was given by Sir John Coleridge, did not lay that down as a ground at all. The decision itself is applicable to the Darling; the facts are not.

2018. Will you give us your opinion as to what are the rights of grantees from the Crown of lands situated on the banks of the Darling? Of course, we must suppose a grant in the usual terms: "On the Darling," "bounded by the Darling," or with some equivalent words, that is, with no reservation, either expressed or implied, so as to bring it on all-fours with the grant in Lord's case. Assuming such a grant, the question is—What would the law, as laid down by a court of highest authority, declare? Here we come to the crux, and there is no disguising the fact that it is a crux. In England they have no such water-course as the Darling; and therefore the law as it has been evolved there may fairly enough be argued to be inapplicable to such a stream as the Darling. The judges of seven or eight of the States in the American Union have made the distinction, and have refused to apply the English common law to their rivers. For example, that has been done in Pennsylvania, Tennessee, the two Carolinas, and other States whose names I have forgotten. On the other hand the English common law in its entirety has been held applicable in such States as New York, Massachusetts, Illinois, Connecticut, Indiana, and others. The preponderance of authority there is in favour of the English common law doctrine, and even a large river like the Mississippi has been held to be non-navigable because it is beyond the influence of the tides.

2019. Is that a recognised decision? Yes, and a most important decision. It was given by the Supreme Court of Indiana, and I shall presently hand in some authorities which you will see support what I say. The preponderance of opinion in the American Courts, both in number and in value, is strongly in favour of the English law.

2020. Then your opinion runs in the direction that the owners of land on the banks of the Darling have property in the soil to the middle of the stream? That is the American law, and I take it that it is a fair answer to those who contend that the English law has no applicability here to say that in America a majority of the States have adhered to the English law. The American streams more closely resemble ours than anything you can discover in England. In England, at a very short distance from the embouchures of the rivers, navigation is carried on by means of locks and canals, and the law there has been settled for years, that, whether a stream is navigable or not, if it is not influenced by the tides, the riparian owners of land on each side of it are presumed to be entitled to the soil of the bed of the river up to the middle thread. That opinion has been held ever since the time of Lord Hale, and has been affirmed over and over again. I do not remember any recent case in which it has been disputed in England. According to the preponderance of legal opinion, the Darling is not navigable in law, though it may be navigable in fact. As I have already pointed out, it has been decided in America that the Mississippi is a non-navigable stream throughout the State of Indiana, while a similar decision has been given in regard to the Hudson. One of the reasons given for these decisions in America is, that it is better that this land should belong to some one than that it should be a sort of no-man's land, as it would be if it belonged to the State.

2021. Has there been any decision upon the point out here? None, that I am aware of; and I think I should have known if there had been. The Land Appeal Court has held, following the authority of Lord's case and others, that at a certain part of the Nepean, between Penrith and Richmond, where the river is, as a matter of fact, non-navigable, the owner of land granted by the words "on the Nepean" was entitled to the land *ad medium flum*. There was an appeal to the Supreme Court, but it was dismissed on a preliminary objection. The case came to the Appeal Court as a reference from a land board for direction. The Appeal Court went into it fully, with the result that I have stated, and the Crown, feeling aggrieved, asked the Appeal Court to state a case to the Supreme Court; but their honors the judges would not entertain it, because they thought that it was merely academical. The case to which I refer is known as *Waldron's case*.

2022. What right has a man to so deal with the water of a stream as to diminish the supply passing by the property below him, or to throw back water upon land above him? It appears to me that we must be guided by the common law of England. There are many parts of the Darling where the bed of the river must still belong to the Crown.

2023. *Chairman.*] When the Crown holds land on both sides of a river it also has the property in the bed of that river? Yes.

2024. When the Crown owns land on one side of the river, and a private owner owns the land on the other side of the river, half the bed of the river belongs to the Crown and half to the private individual? Yes, I think that would be the decision of the highest authorities. Supposing the Crown constructs works in the bed of the river on its own soil, where no question of *ad medium flum* ownership occurs, this may have two effects—the water may be so dammed back as to flood the land of owners higher up the stream, while the supply to owners lower down the stream may be diminished. This amounts to an infringement of the rights of these owners, or what the lawyers call *injuria*; but the compensation which riparian proprietors would get for such injury would only be in proportion to the actual damage sustained. But I apprehend that works of the kind of which I am speaking would be the subject of various remedies. They might amount to the creation of a public nuisance, or of a private nuisance, and might, according to the nature of the nuisance, be the subject of abatement or of an injunction, an information, or of an action for damages. The Crown would have no more right to damage the property of a private riparian owner than

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than another private individual would have. But there are many things which the Crown could do which, although on the first appearance they might as public nuisances import damage or injury, would really inflict only inappreciable and no special damage, and in such a case the party aggrieved would have no remedy by action, though he might by information filed by the Attorney-General. Of course, under certain circumstances, there would also be the remedy by Abatement.

2025. *Mr. Trickett.*] That being so, do you think it would be desirable, before constructing locks and weirs on the Darling, to bring in legislation to prevent harassing law actions? Unquestionably. I may add that in nearly every case I know of elsewhere such works have had the support of legislation.

2026. Another matter to be considered is the effect of forcing back water into ana-branches and similar depressions? If you could be sure that the work would result in no appreciable damage to any one, legislation would not be necessary.

2027. But these works, although advantageous by conserving water for future use, might be detrimental to people living on the banks of the river? Yes. I know the Darling pretty well; I have travelled on both sides of it all the way down, and I think it would be rather a difficult thing to find a place where you could construct a dam without the possibility of doing a good deal of damage to the property of some adjacent owners if a flood should occur.

2028. If, by reason of the construction of one of these dams the river were to cut a new channel for itself through private property, the owner of that property would have an action for compensation? There is not the least doubt about it.

2029. And I daresay you have noticed that that is not at all an impossible condition? Not at all. The same thing has happened over and over again in America.

2030. With what result? I am not prepared to say what legal proceedings have followed, but frequently in America a very slight interference with the river has made it deviate very considerably from its course. That may or may not be an advantage, but in most cases it would cause injury.

2031. Looking at all these points of difficulty, do you think the Committee would be justified in recommending that before the Government commenced any scheme of the kind into which we are considering legislation should be introduced to cover their actions? I think there is no doubt about that. I forgot to mention what might be the position of the Crown in regard to any obstructions to navigation. Works might be constructed by the Crown on its own soil, which might, nevertheless, obstruct the navigation of the river. The right of navigation is a public right, and is paramount to every other right, and any work carried out by the Crown which obstructed navigation would be a public nuisance.

2032. *Chairman.*] Could I, as a landowner on the banks of the Darling, put up a wharf in the river? Undoubtedly, if it was erected on your own ground, and did not affect the navigation of the river, or obstruct the flow of water, or do any other consequential damage. You would put up such a wharf at your own risk. The right to put up a wharf would be controlled by the public rights of navigation.

2033. Can you define this right of navigation? It is the right of anyone to go to and fro on the river, make fast to its banks, and anchor where he likes. The man who put up a wharf in the Darling which projected more than a few feet from the banks would do it at his own risk, and if any steamboat master found that it was an obstacle to navigation he could pull it down, but at his own risk, because any man who abates a nuisance does so at his own risk, and that risk is by no means an inconsiderable one. The master of a steamboat might, if he thought necessary, get the Attorney-General to file an information, or he might go to the Court of Equity for an injunction to prevent the erection of a wharf—in fact, he would have plenty of remedies. In Spain and in Italy the State has taken over the beds of these watercourses; but that has not been so here, and in the absence of much needed legislation we have to consider what the common law on the subject is.

2034. *Mr. Trickett.*] How are these difficulties got over in the old country, where there are so many canals and locked rivers? When you get past the influence of the tides on the English rivers, you generally find the water conserved by a system of locks, and, as a general rule, the right to use the tow-path is regulated by legislation, while the watercourse is put under conservators. There are some rivers where there is a customary right of towing, arising from immemorial user. Many watercourses—for instance, the great Bridgewater Canal—are the subject of legislation, in which every matter has been elaborately dealt with.

2035. This all points to the necessity of having similar legislation here? Yes; if the State embarks in any considerable works in anticipation of, or without, legislation a large harvest of law suits will be reaped by some people.

2036. You told us a little while ago that the people down stream would have a right of action if their water supply was interfered with? If the interference amounted to a public nuisance, they could not maintain an action without proof of special damage, and they would be so informed by any counsel advising them. If it was a legal injury accompanied by actual special damage they would get substantial compensation, proportionate to the amount of damage suffered.

2037. The same principle of law would operate if any land was swamped, or submerged by the damming back of the river? Yes; the rights of the upper riparians would stand on the same level as those of the lower riparians.

2038. When the Sectional Committee was recently at Bourke the Darling was a dirty, torpid, narrow, muddy stream;—supposing the construction of weirs materially decreased the supply of water lower down the river the people affected would have ground for an action for compensation? Yes. Supposing a man had a mill, or a wool-washing plant, below the weir, and the river level was so lowered that he could not use the water, actual damage would be done to him, and he would have a right to bring an action to recover compensation, unless the State had protected itself by legislation. I look upon most of these rights to the soil of the Darling as not meaning very much; that is to say, if an act were passed vesting the soil of the Darling in the Crown, subject to the payment by way of compensation of such amounts as might be due to any riparian proprietor who had been deprived of his land by the action of Parliament, I do not think the amount of compensation which would have to be paid would be very large. As a rule the proprietors on the Darling would not be affected by such an Act. These rights are rather illusory; they do not mean much. If I had been consulted with regard to the Water Rights Bill, I should have advised that the Bill should vest the whole of the freshwater river beds in the Crown, and to provide that where any person was injured by the operation of the statute, and could prove injury, he should be entitled to such compensation as the Courts might award. That provision has been made over and over again in England and elsewhere, and that some such legislation is necessary here I have not the slightest doubt.

2039. *Mr. Lee.*] The right to the soil under a river might not mean much, but the construction of a weir

might

might limit the quantity of water flowing in the river below it, and might cause lands above it to be subject to the risk of floods? Yes, that would be a very serious matter; but it would be a question for experts to determine what would be the probable results of the work.

2040. *Mr. Trickett.*] The Darling is the drain of all the north-western country, and the construction of locks and weirs in it might have the effect of restricting the flow? Yes, unless the by-washes were properly constructed. The flood-water of 1890 came principally from Queensland. The rainfall in this Colony had not been very great. That flood, although the water rose perhaps not more than 18 inches above the bank at Bourke, caused immense disaster to pastoralists. The country out there is so level that it is difficult to find an eminence 20 feet high.

2041. *Mr. Humphery.*] Your opinion appears to be that legislation should precede the construction of the proposed works? Yes; or any important works in the bed of the Darling.

2042. It is an extremely hazardous thing to proceed with such works now, pending legislation? I should think so—very hazardous.

2043. *Mr. Roberts.*] You appear to hold quite a contrary opinion to that of the Crown Solicitor on the question of the rights of adjoining owners to the soil in the bed of the stream? I do.,

2044. You hold that if a man owns land on the banks of a river, he has a right to the soil up to the middle of the stream? I would rather say that that is the law as laid down by judges of authority.

2045. Has the owner of land on the banks of a river a right, by virtue of that ownership, to use the water of the river without the consent of the Crown? He has what the lawyers call a *usufruct*, that is, the use of the water without any ownership in it. He can take it for the purposes of his tenement, so long as he takes only a reasonable quantity, and does not diminish the supply of those below. Water, like air and light, is a thing in which you cannot have any property; you can only use it, and you must only use it in such quantities as not to interfere with the rights of others. That seems a vague definition, but it is as far as the law of England has allowed itself to go. If a man has a frontage of 100 chains to an intermittent stream, can he irrigate 50,000 acres, or water 20,000 sheep? That is to say, can he take a larger quantity of water than is proportionate for the length of his frontage? The tendency of the English courts is to say, "No, he can not"; but they are not able to say how much he may take. All they are able to say is that, when he takes such a quantity as to inflict injury with special damage upon any one below the person damaged has a remedy against him.

2046. Can a man take water from a river for irrigation purposes? Yes, for irrigating his own land, provided he does not take an excessive quantity in comparison with his frontage. The judges have said that he can take so much water as, allowing for absorption by the soil, will still permit the riparian proprietors below to have a supply brought to them without appreciable diminution. A man might take 10,000,000 gallons from a stream which was constantly running, and probably 3 miles below you would see no diminution in the supply. The quantity which may be taken depends largely on the size of the stream. A man might take an immense quantity from the Murray, but from a very small stream he could only take a correspondingly small quantity. Our law is to some extent founded on a scriptural basis: you must do to others what you would that they should do unto you.

[Mr. Oliver then handed in some extracts from English and American Cases and Text Books. *Vide Appendix.*]

A. Oliver,  
Esq., M.A.  
21 July, 1896.

## PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

## Construction of Locks and Weirs on the River Darling.

## APPENDIX.

## A.

[To Evidence of C. L. Shainwald, Esq.]

RETURN showing Days the Darling River was navigable from 1st January, 1882, to 26th May, 1896, inclusive.

Year.	Days open.	Days closed.	Percentage open during Year.	Year.	Days open.	Days closed.	Percentage open during Year.
1882	84	281	23	1889	190	175	52
1883	44	321	12	1890	354	11	97
1884	21	345	06	1891	282	83	77
1885	31	334	08	1892	247	119	68
1886	222	143	61	1893	337	28	92
1887	269	96	74	1894	282	83	77
1888	82	234	22	1895	54	311	15

Average for fourteen years, 49 per cent.

During 1896 to date, 25th May, the river has been navigable for seventy-one days and closed for seventy-five days, and is at present not navigable.

As emphasising the irregular character of navigation and its dependence almost wholly on tropical rains, which are purely fortuitous, it may be added that the months of the year during the past fourteen years in which navigation has been most frequent are January and February.

## B.

[To Evidence of J. W. Boulbee, Esq.]

RETURN showing Cost, Annual Revenue, and Expenditure in connection with Government Artesian Bores.

Bore.	Depth in feet.	Flow in gallons per diem.	Cost.	Revenue per annum.	Expenditure, wages, &c.	Remarks.
	Approximate.		£ s. d.	£ s. d.	£ s. d.	
Goonery .....	120	5,000	240 0 0	17 10 0	.....	Leased.
Bourke .....	1,467	.....	2,270 0 1	.....	.....	Failure.
Native Dog .....	457	500,000	1,009 6 5	90 2 6	.....	Leased.
Barrington .....	1,711	170,000	3,785 10 9	40 0 0	.....	"
Erngonia .....	1,666	320,000	3,079 4 9	56 0 0	.....	"
Waroo .....	1,385	17,000	705 8 7	12 0 0	23 0 0	Leased under bonus system.
Youngerrina .....	165	120,000	763 4 6	20 0 0	.....	Leased.
Yantabulla .....	209	7,500	754 1 10	60 0 0	.....	"
Nyngan .....	710	Pumping	1,733 10 4	.....	.....	No appliances.
Green Camp .....	1,327	"	2,154 15 7	.....	.....	"
Moongulla .....	2,570	850,000	6,838 10 5	204 0 0	325 5 6	Caretaker, 2 assistants. Revenue—Collections, rent of blocks, and right of water fees. Expenditure incidental to Government farm included in this.
Dungle Ridge.....	2,566	850,000	7,278 0 5	90 0 0	.....	Leased. Revenue—Rent of tenant's lease and water-right fees.
Tolaro .....	1,602	Pumping	3,036 1 7	.....	.....	No appliances.
91-mile .....	2,002	"	4,013 1 9	.....	.....	"
Osacca .....	1,646	350,000	3,276 5 7	42 11 1	146 0 0	Caretaker. Revenue—Collections and water-right fees.
Clifton .....	1,638	2,000,000	3,476 14 9	.....	.....	No caretaker.
Sandy Creek .....	730	Pumping	1,872 11 7	106 1 10	146 0 0	Caretaker.
Packsaddle .....	1,942	"	3,982 3 1	.....	.....	No appliances.
Hay .....	1,962	"	4,011 7 1	.....	.....	Supply insufficient.
Dalmoreve .....	1,237	"	2,817 15 0	10 0 0	.....	Leased.
Opera .....	803	"	1,357 13 6	5 0 0	48 0 0	Leased under bonus system.
Barrona .....	1,010	200,000	1,482 2 4	25 0 0	.....	Leased.
Currabulla .....	1,973	Pumping	2,468 1 5	1 0 0	45 0 0	Leased under bonus system.
Mulgany .....	1,700	"	1,445 15 9	5 0 0	45 0 0	"
Tinchelooka .....	1,231	52,000	1,463 15 6	90 0 0	.....	Leased.
Cuttaburra .....	1,707	20,000	2,302 15 11	8 5 2	109 10 0	Caretaker.
Belalie .....	1,565	400,000	2,882 2 9	20 0 0	.....	Leased.
Kulkyne .....	1,781	.....	2,564 12 5	.....	.....	Failure.
Walkden's .....	1,604	200,000	2,059 15 7	121 17 4	109 10 0	Caretaker.
Kelly's Camp.....	1,577	600,000	2,188 3 0	40 0 0	127 15 0	"
Sibraas .....	1,059	700,000	1,554 19 8	20 0 0	.....	Leased.
Kerribree Creek..	1,193	800,000	1,602 15 1	20 0 0	127 15 0	Caretaker.
Gidgia Camp.....	2,002	7,000	2,599 0 0	100 0 0	.....	Leased.

Bore.	Depth in feet.	Flow in gallons per diem.	Cost.	Revenue per annum.	Expenditure, wages, &c.	Remarks.
Poison Point .....	1,399	20,000	£ s. d. 1,650 15 2	£ s. d. .....	£ 's. d. .....	No caretaker.
Pera .....	1,154	610,000	1,487 17 8	87 12 2	466 3 0	Manager and 3 assistants. Expenditure covers that incidental to farm. Revenue—Rent of blocks and collections.
Brigalow .....	2,292	150,000	3,232 14 11	0 9 3	109 10 0	Caretaker.
Coonamble .....	1,302	1,878,005	3,060 0 6	.....	.....	Municipal Council to pay half cost. Sunk by Works Department.
Bourbah .....	1,797	1,134,000	4,030 11 10	.....	.....	No caretaker. Sunk by Works Department.
Nevertire .....	2,525	Pumping	5,301 8 7	.....	.....	.....
Berawinnia .....	855	Nil.....	1,719 10 7	.....	.....	Failure.
Bendermere .....	1,726	.....	2,390 13 8	.....	.....	.....
Narrowin .....	1,179	Pumping	1,638 13 10	.....	.....	No appliances.
Wanaaring .....	1,641	400,000	2,792 3 9	.....	127 15 0	Caretaker.
Euroka .....	1,542	3,000,000	2,375 8 6	.....	.....	Recently completed.
Gal Gil .....	3,000	2,000,000	.....	.....	.....	Recently completed. Cost not made up.
Moree .....	2,792	2,907,000	6,495 19 1	.....	127 15 0	Caretaker.
Total .....	.....	.....	119,155 5 1	1,282 9 4	2,083 18 6	.....

## B 1.

RETURNS showing value and yield of crops grown in America by means of irrigation, area of land irrigated, and cost of water and maintenance per acre to one user.

NOTE.—A., Artesian; G., Gravitation; D., Doubtful.

State.	County.	Area cultivated and irrigated.	Cost of water to user per acre.	Cost for maintenance and repairs per acre.	Products—Value and yield per annum per acre.	Remarks.
California .....	G. Fresno .....	Acres. 13,000	£ s. d. 0 4 2	£ s. d. 0 0 7	Raisin grapes, £10 8s. 4d. to £41 13s. 4d. per acre; alfalfa, £10 8s. 4d. to £20 16s. 8d. per acre; grain (on same land), £2 1s. 8d. to £5 4s. 2d. per acre; tree fruits, £10 8s. 4d. to £41 13s. 4d. per acre.	
„	G. & A. Kern .....	45,000	0 6 3	0 0 5	Raisins, peaches, pears, prunes, plums, apricots, figs, nectarines, &c., alfalfa, hay, live stock, barley, wheat, potatoes, and garden vegetables of all kinds. Yield, £20 16s. 8d. per acre.	
„	G. Lassen .....	.....	1 0 10	.....	.....	In progress.
„	G. Los Angeles.....	3,000	.....	0 4 2	Oranges, lemons, strawberries, &c., alfalfa, potatoes, &c.; average yield, from £10 8s. 4d. to £145 16s. 8d. per acre.	
„	G. „ .....	15,000	.....	.....	Oranges yield from £104 3s. 4d. to £208 6s. 8d. per acre; lemons yield from £208 6s. 8d. to £312 10s. per acre; peaches, pears, apples, £41 13s. 4d. to £104 3s. 4d. per acre.	Two or three crops of different products raised yearly.
„	G. Merced .....	9,280	.....	.....	Almonds, apricots, berries, nuts, olives, peaches, pears, plums, prunes, and raisin grapes.	
„	G. & A. Orange .....	30,000	1 6 0	0 2 1	.....	
„	G. Placer .....	4,000	.....	0 4 2	Chiefly all varieties of deciduous fruits.	
„	G. Sacramento .....	1,200	.....	8/4 to £2	Table and wine grapes, deciduous fruits, and vegetables.	
„	G. & A. San Benito .....	3,000	.....	0 4 2	.....	
„	G. & A. San Bernardino .....	41,440	0 3 1	.....	Oranges, lemons, peaches, apricots, pears, prunes, figs, apples, olives, nuts, vines; average yield, £20 16s. 8d. to £166 13s. 4d. per acre.	
„	G. & A. San Joaquin.....	50,000	.....	.....	.....	In progress.
„	A. Sonoma .....	45	1 2 2	.....	Fruit and gardens yield £52 1s. 8d. per acre.....	Permanent water right.
„	G. Tulare .....	124,000	.....	.....	Wheat, oats, barley, corn, potatoes, vegetables, raisins, prunes, peaches, apples, nectarines, oranges, lemons, olives, apricots, pears, wine grapes, alfalfa, blue grass, nuts of all kinds; average yield, £5 5s. to £8 13s. 4d. per acre.	
„	G. „ .....	1,400	2/1 to 4/2	.....	Yield—fruit, £20 16s. 8d. to £52 1s. 8d. per acre; vegetables, £41 13s. 4d. to £62 10s. per acre.	
„	G. Yuba.....	3,500	0 12 6	0 1 3	Strawberries, £87 10s. per acre; oranges, £145 16s. 8d. to £208 6s. 8d.; blackberries, £104 3s. 4d.; peaches, £52 1s. 8d. to £72 18s. 4d.; wheat, £2 1s. 8d. to £6 5s. per acre.	With water, this place is a “bonanza.”
Colorado A. & G.	.....	5,000,000	.....	7½ to 1/8	Wheat, 25 bushels; oats, 45 bushels; barley 35 bushels; potatoes, 150 bushels; pears, 25 bushels; corn, 30 bushels; clover and timothy, 2½ tons; alfalfa 5 tons per acre.	
„	G. Arapahoe .....	3,000	0 8	42/1 to 6/3	Potatoes, alfalfa, and all garden truck, £5 2s. 1d. to £125 per acre.	
„	G. „ .....	12,000	2 1 8	0 2 1	Wheat, oats, barley, corn, potatoes, alfalfa, clover, timothy, garden products, and all fruits (except tropical) yield on average £2 1s. 8d. per acre.	
„	D. Boulder.....	4,000	.....	0 0 5	Grain, £3 2s. 6d.; fruit, £20 16s. 8d. per acre.	
„	G. Chaffee .....	500	2 1 8	0 2 1	Wheat, oats, barley, rye, potatoes, peas, turnips, average £4 2s. 4d. per acre.	
„	G. & A. Conejos, Costilla, Rio Grande, and Saquache.	100,000	1 6 0	10 to 1/3	Wheat, 25 to 30 bushels; oats and barley, 40 to 50 bushels; potatoes, 175 to 200 bushels per acre.	

State.	County.	Area cultivated and irrigated.	Cost of water to user per acre.	Cost for maintenance and repairs per acre.	Products—Value and yield per annum per acre.	Remarks
Colorado	G. El Paso	Acres. 12,000	£ s. d. ....	£ s. d. 0 1 3	Wheat, 25 bushels; oats, 40 bushels; corn, 50 bushels; barley, rye, potatoes, 200 bushels; hay, 1½ ton; cabbage and other vegetables, fruit of temperate zone, and grasses.	
"	G. & A. Fremont	.....	2 1 8	.....	Apples, pears, peaches, apricots, alfalfa, potatoes, and all fruits and vegetables of temperate zone. Alfalfa cut three or four times in year yields as high as 127 tons per acre, worth £1 5s. per ton.	Permanent water right.
"	G. & A. "	2,500	.....	3/4 to 4/2	Fruit and garden yields £31 5s. per acre; alfalfa, £9 7s. 6d. (5 tons per acre).	Ditch owned by landowners.
"	G. Garfield and Pitkin	200	0 16 8	.....	Wheat, oats, rye, barley, potatoes, and other vegetables, alfalfa, &c.	
"	G. Kiowa	200	*0 4 2	†1 9 2	Wheat, 15 bushels; oats, 35 bushels; corn, 25 bushels; rye, 25 bushels; sorghum, 5 tons; potatoes (sweet), 50 bushels; potatoes (Irish), 75 bushels; vines of all kinds grow well.	*Water right annual. †Perpetual water right.
"	G. Las Animas	30,020	.....	0 4 2	Alfalfa, 4 to 5 tons; blue stem, 1 ton; oats, 40-80 bushels; corn, 25-40 bushels; wheat, 30 bushels; barley, rye, sorghum, vegetables do well; beans (average 40 bushels), apples, grapes, and garden truck.	
"	G. La Plata	1,800	2 1 8	0 3 1	Wheat, 20 bushels; oats, 45 bushels; alfalfa, 3½ tons, but yield increases with age.	
"	G. Larimer	18,000	0 16 8	0 0 5	Wheat (mostly), oats, barley, corn, potatoes, and alfalfa; yield—products, £2 19s. 2d. per acre; forage, £2 10s. per acre.	
"	G. "	2,300	2 3 6	0 4 2	Cereals: Alfalfa, native hay, vegetables of all kinds, and fruit; yield—fruit, £4 3s. 4d. to £62 10s. per acre; alfalfa, £4 3s. 4d. to £10 8s. 4d. per acre.	24 shareholders at £208 6s. 8d. per share for water rights.
"	G. Larimer & Weld	34,000	3 2 6	0 0 6	Wheat, 30 bushels; oats, barley, alfalfa, potatoes, onions, cabbages, &c.	Perpetual water right.
"	G. Mesa	15,000	2 1 8	0 0 10	Wheat, oats, corn, alfalfa, potatoes, fruit, vegetables, &c.	This scheme is celebrated for its fruits.
"	G. "	15,000 to 18,000	2 1 8 to 3 6 8	0 0 6 to 2 7	All kinds of semi-tropical fruits (peaches, pears, apples, apricots, nectarines, grapes, and almonds), oats, wheat, corn, potatoes, and alfalfa; estimated yield, oats, &c., and alfalfa, £3 2s. 6d. to £5 4s. 2d. per acre; fruit, £62 10s. to £104 3s. 4d.	
"	G. Montrose	.....	0 13 6	.....	Wheat, 25 bushels; oats, 60 bushels; barley, rye, alfalfa, fruit, &c.; fruit pays best, alfalfa next.	
"	G. Otero	5,000	2 1 8	7/5 to 1/-	Wheat, 25 bushels; oats, 35 bushels; corn, 30 bushels; beans, 20 bushels; alfalfa, hay 6 tons, seed 5 bushels; sweet potatoes, melons, and all truck raised extensively.	Perpetual water right.
"	G. "	13,000	2 1 8	0 0 7½	Wheat, 25-40 bushels; oats, 30-60 bushels; corn, 25-40 bushels; hay, 3 tons; alfalfa, beans, &c.	" "
"	G. "	32,000	2 12 1	0 0 7½	Alfalfa, 4 tons; wheat, 25 bushels; corn, 20 bushels; oats, 50 bushels; barley, 30 bushels; vegetables and fruit grow to perfection.	" "
"	G. Bowers	.....	2 1 8	0 0 7½	Alfalfa, 8 tons; wheat, 40 bushels; oats, 25 bushels.	" "
"	G. "	1,060	19 2 0	0 0 7½	Wheat, oats, barley, rye, alfalfa, potatoes, corn, and fruits: average yield, £3 15s. per acre.	" "
"	G. "	5,000	2 1 8	7/7 to 1/-	Wheat, 30 bushels; alfalfa, 4-5 tons; oats, 40 bushels; rye, 30 bushels; barley, 40 bushels; corn, 50 bushels; potatoes, (sweet), 100 bushels; melons, &c.	" "
"	G. Pueblo	7,500	.....	0 2 7	Alfalfa, 7 tons; vegetables; grain, 30 bushels; maize.	
"	G. "	100,000	2 1 8	1/10 to 12/6	Wheat, 20-30 bushels; oats, 30-40 bushels; corn, 40 bushels; grain generally, 20-40 bushels; alfalfa, 4-8 tons; grain crops, worth £4 3s. 4d., to £6 5s. per acre; fruit crops, worth £31 5s.; melons, £10 8s. 4d. to £20 16s. 8d.; apple crops, worth £20 16s. 8d. to £41 13s. 4d.; garden truck, £52 1s. 8d.; alfalfa, £4 3s. 4d. to £12 10s.; average revenue from all crops from £4 3s. 4d. to £6 5s. per acre.	
"	G. Routt	9,500	.....	0 2 1	Wheat, 30 bushels; oats, 40 bushels; potatoes, 300 bushels, and hay.	
New Mexico	G. Donna Ana	.....	.....	1/10 to 4/2	Cereals, and alfalfa, net £4 3s. 4d. to £5 4s. 2d. per acre; crops, separate from grazing or forage, £3 2s. 6d. to £4 3s. 4d.	
"	Wells. Grant	.....	.....	0 4 2	Average value products, £20 16s. 8d. to £52 1s. 8d. per acre, fruit or vegetables.	
"	G. San Juan	440	3 2 6	.....	.....	
"	G. "	600	0 16 8	.....	.....	
"	G. San Miguel	500	.....	4/2 to 6/3	Principally alfalfa, (3 tons to acre), some corn, and vegetables.	
"	G. "	500	.....	.....	Alfalfa, corn, sorghum, and oats.	
"	G. "	500	2 1 8	0 4 2	All fruits, temperate zone, £83 6s. 8d. per acre; grain, &c., £8 6s. 8d. per acre.	
Utah	G. & A. Cache	.....	*0 0 6	.....	Alfalfa, 3 to 6 tons; grass, 2½ tons; wheat, 30 bushels; oats, sorghum, potatoes, &c., some fruits; value of products, £2 1s. 8d. to £3 2s. 6d. per acre.	*Each watering.



State.	County.	Area cultivated and irrigated.	Cost of water to user per acre.	Cost for maintenance and repairs per acre.	Products—Value and yield per annum per acre.	Remarks.
Utah ...	A. & G. Davis .....	Acres. 2,000	£ s. d. ....	£ s. d. 0 0 5	Wheat, 25 bushels; barley, 35 bushels; oats, 40 bushels; potatoes, 100-600 bushels.	
"	..... G. Grand .....	1,000	....	0 12 6	Hay, 5 tons (£1 5s. per ton); fruit—grapes, £208 6s. 8d.; corn, 30 bushels (at 5s. per bushel).	
"	G. & A. Salt Lake .....	30,555	0 6 3	3/4 to 4/2	All cereals, vegetables, and fruits, temperate zone.	
"	..... G. Tooele .....	3,000	*0 4 2	0 4 2	Wheat, 30 bushels; oats and barley, 60 bushels; alfalfa, corn, potatoes, &c., fruit.	*Annual rent.
"	... AG. Utah .....	1,500	.....	0 2 1	Wheat, oats, corn, hay, potatoes, fruits.	
"	... AG. " .....	1,000	†5 4 2	0 4 2	Wheat, 20 bushels (average, 3s. 1d. per bushel); alfalfa, corn, oats, potatoes, beans, sugar-beets, sugar-cane, and fruit.	†Cost of ditch.
"	... AG. " .....	15,000	‡2 1 8	0 4 2	Wheat, oats, barley, corn, alfalfa, tame and wild hay, sugar-cane, sugar-beets, potatoes, and other vegetables, also variety fruits, &c.	‡First cost. §Annual cost. Cost per acre, £1 0s. 10d. to £6 5s.
"	..... G. Weber .....	8,000	0 4 2	-/5 to -/7½	Cereals, 20-60 bushels; potatoes, 200-400 bushels.	
"	..... G. " .....	.....	.....	.....	Wheat, 25-30 bushels; barley, 40-45 bushels; corn, 60 bushels (and over); potatoes, 300 bushels (or over).	
South Dakota	A. Beadle .....	.....	0 4 2	0 0 5	Wheat, 40 bushels per acre; oats, 50 bushels; corn, 75 bushels; flax, 16 bushels; potatoes.	
"	..... A. Brown .....	2,000	0 4 2	0 2 1	Wheat, 30 bushels; oats, barley, corn, millet, flax, potatoes, and other root crops; sugar-beets.	
"	(Springs) G. M'Pherson .....	200	.....	.....	.....	
"	..... G. Pennington .....	1,500	.....	0 0 5	Mostly hay (native hay, 1 acre), timothy, and clover (3 tons), corn.	
"	..... G. " .....	115	.....	1/0½ to 2/1	Wheat, 35 bushels; oats, 60 bushels; hay, 3-6 tons.	
"	..... A. Spink .....	300	0 8 4	.....	.....	
"	..... A. " .....	160	.....	.....	.....	

NOTE.—The total area irrigated in the United States is approximately 17,000,000 acres.

## C.

[To Evidence of P. Scarr, Esq.]

COACH Routes and other Roads from Bourke and Brewarrina, with Explanatory Diagram.

Road.	Distance.	Remarks.
	miles.	
* Bourke to Wilcannia, via Louth, down river Darling .....	250	Not scheduled.
* Bourke to Wanaaring, tends westerly from Bourke.....	113	Scheduled £300, 95-6.
* Bourke to Hungerford (on Queensland border), N.W. from Bourke.....	126	Scheduled £300, 95-6.
* Bourke to Barrington (on Queensland border).....	80	Scheduled £400, 95-6.
* Bourke to Brenda, up Culgoa .....	110	(About) not scheduled.
* Bourke to Brewarrina .....	68	(About) not scheduled.
Bourke to Cobar .....	100	(About) not scheduled.
* Brewarrina to Walgett .....	140	£280 on 95-6 schedule.
* Brewarrina to Byrock (on railway) .....	60	(About) not scheduled, but improved.
Brewarrina to Nyngan (on railway).....	140	(About).
* Brewarrina, via Bundabulla, towards Brenda .....	73	(About).
* Brewarrina to Bokhara or Goodooga (on Queensland border).....	80	(About) not scheduled, but improved.
Brewarrina to Enngonia.....	75	£150 on 95-6 schedule.

PERCY SCARR,

Principal Assistant Engineer, Roads,  
23/5/96.

The Secretary, Parliamentary Standing Committee on Public Works.

D.

**D.**  
 [To Evidence of J. C. H. Mingaye, Esq., F.C.S.]  
 ANALYSES of Artesian Waters from Various Centres in New South Wales.  
 (Grains per Imperial Gallon).

No	Locality.	Total Solid Matter. Dried at 230° F.	Sodium Carbonate. (Na <sub>2</sub> CO <sub>3</sub> ).	Potassium Carbonate. (K <sub>2</sub> CO <sub>3</sub> ).	Calcium Carbonate. (Ca CO <sub>3</sub> ).	Magnesium Carbonate. (Mg CO <sub>3</sub> ).	Sodium Chloride. (Na Cl).	Potassium Chloride (K Cl).	Magnesium Chloride (Mg Cl <sub>2</sub> ).	Calcium Sulphate. (Ca SO <sub>4</sub> ).	Magnesium Sulphate. (Mg SO <sub>4</sub> ).	Potassium Sulphate. (K <sub>2</sub> SO <sub>4</sub> ).	Iron Oxide and Alumina.	Silica and Silicates.	Organic Matter.	Total Solid Matter. Grains per gallon.	Free Ammonia.	Albuminoid Ammonia.	Remarks.
1	*Cuttaburra Bore..	396·872	6·712	...	6·664	·336	340·040	trace	4·190	.....	...	.....	·112	1·596	.....	396·872	...	...	A strong saline water, unsuitable for human consumption, stock, and irrigation.
2	Port Bourke (private)..	53·768	21·663	12·260	4·750	·037	9·720	.....	...	.....	...	1·250	trace	4·088	.....	53·768	...	...	
3	Bourke Bore .....	34·298	20·941	2·952	...	trace	8·445	.....	...	.....	...	.....	trace	1·960	trace	34·298	...	...	
4	Corella Station (No. 1 Bore, private)	46·340	27·813	7·170	1·000	·336	8·733	.....	...	.....	...	.....	trace	1·288	trace	46·340	...	...	
5	Youngerina Bore..	32·984	*	...	...	.....	.....	.....	...	.....	...	.....	.....	.....	.....	.....	...	...	Soluble saline matter ..... 81·892 gr. per gallon. Insoluble mineral matter .. 1·092 " "
6	Native Dog Bore...	45·108	*	...	...	.....	.....	.....	...	.....	...	.....	.....	.....	.....	.....	...	...	Soluble saline matter ..... 44·044 gr. per gallon. Insoluble mineral matter .. 1·064 " "
7	*Mallara Bore .....	141·750	*	...	.....	.....	.....	.....	.....	calcium chloride	.....	.....	.....	.....	.....	.....	...	...	
8	*Opera Bore .....	31·6·0	*	...	8·190	.....	278·382	12·274	6·580	5·838	.....	.....	.....	·996	.....	312·260	...	...	A strong saline water, unsuitable for human consumption and useless for irrigation.
9	†Barrona Bore .....	148·374	7·952	...	7·550	·987	78·173	52·508	...	.....	.....	.....	.....	1·204	trace	148·374	...	...	The potash salts are exceptionally high.
10	†Tinchelooka Bore..	129·948	3·526	...	6·650	1·510	66·074	50·816	.....	.....	.....	.....	.....	1·372	trace	129·948	...	...	
11	Sibraas Bore .....	70·112	24·951	8·289	2·799	trace	30·321	.....	.....	.....	.....	.....	·308	2·240	1·204	70·112	·010	·012	A minute trace of phosphoric acid and nitrates detected.
12	Kelly's Camp Bore	35·081	16·869	5·666	·689	trace	7·909	.....	.....	.....	.....	.....	·196	1·316	2·436	35·081	·016	·024	
13	Yantabulla Bore..	39·996	17·369	6·615	1·549	·930	9·557	.....	.....	.....	.....	.....	traces	1·456	2·520	39·996	·009	·020	
14	Enngonia Bore ..	47·650	30·367	4·741	1·199	absent	7·745	.....	.....	.....	.....	.....	traces	1·694	1·904	47·650	·071	·008	
15	Belahie Bore .....	39·784	27·773	1·269	·649	trace	7·909	.....	.....	.....	.....	.....	traces	1·260	·924	39·784	nil	·002	Minute traces of phosphoric acid present.
16	Kerrilree Ck. Bore	34·335	17·596	6·377	·649	absent	7·745	.....	.....	.....	.....	.....	traces	·980	1·008	34·335	nil	·002	
17	Barrington Bore ..	39·113	23·932	6·104	·350	absent	6·730	.....	.....	.....	.....	.....	·252	1·736	trace	39·113	...	...	
18	Corella Bore .....	50·316	*	...	...	.....	.....	.....	...	.....	...	.....	.....	.....	.....	.....	...	...	Soluble saline matter ..... 46·104 gr. per gallon. Insoluble mineral matter .. 2·212 " "
	(No. 2 private)																		Chlorine in combination .... 0·800 " "

\* The soluble saline matter consists mainly of Carbonate of Soda.

Analyses.—continued.

No.	Locality.	Total Solid Matter Dried at 250° F.	Sodium Carbonate. (Na <sub>2</sub> CO <sub>3</sub> ).	Potassium Carbonate. (K <sub>2</sub> CO <sub>3</sub> ).	Calcium Carbonate. (CaCO <sub>3</sub> ).	Magnesium Carbonate. (MgCO <sub>3</sub> ).	Sodium Chloride. (NaCl).	Potassium Chloride. (KCl).	Magnesium Chloride. (MgCl <sub>2</sub> ).	Calcium Sulphate. (CaSO <sub>4</sub> ).	Magnesium Sulphate. (MgSO <sub>4</sub> ).	Potassium Sulphate. (K <sub>2</sub> SO <sub>4</sub> ).	Iron Oxide and Alumina.	Silica and Silicates.	Organic Matter.	Total Solid Matter. Grains per gallon.	Free Ammonia.	Albuminoid Ammonia.	Remarks.
19	Corella Bore (No. 3 private)	56·868	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Soluble saline matter ..... 45·584 gr. per gallon. Insoluble mineral matter .. 11·284 " " Chlorine in combination .... 4·700 "
20	Waroo Springs	35·794	19·211	4·558	·599	·614	8·404	..	..	..	..	..	·252	1·288	·868	35·794	·012	·005	
21	†Moongulla Bore	83·063	54·795 (Na <sub>2</sub> O)	5·457 (K <sub>2</sub> O)	·800 (CaO)	absent (MgO)	19·939 (Cl)	..	..	..	..	..	..	2·072	..	83·063	..	..	
22	†Dingle Ridge Bore	77·394	40·839	2·369	·214	1·268	9·400	21·600	..	..	..	..	·252	1·052	..	77·394	..	..	
23	Pera Bore	45·076	33·118	1·225	·849	·402	7·690	..	..	..	..	..	·252	1·064	·476	45·076	·036	·005	
24	*Dalmoreve Bore (from shaft by pump)	164·136	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Both these waters are unsuitable for human consumption and useless for irrigation.
25	*Dalmoreve Bore (well bore)	163·632	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Soluble saline matter . . . 147·728 gr. per gallon. Insoluble mineral matter . 18·272 " "
26	Boatman's Bore	34·154	17·745	..	·889	trace	11·123	..	..	..	..	..	..	..	..	34·154	·015	·002	
27	*Poison Point Bore.	206·632	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Soluble saline matter ..... 280·168 gr. per gallon. Insoluble mineral matter .. 10·444 " " Chlorine in combination .... 168·128 " " Water unfit for human consumption and useless for irrigation.
28	†Dingle Ridge Bore.	80·089	52·564	6·945	·324	2·528	15·936	..	..	..	..	..	..	1·792	trace	80·089	..	..	
29	*Baneanyle Bore	253·601	47·469	..	5·150	10·697	171·912	..	..	..	..	..	..	..	..	..	..	..	
30	Walkden's Bore	50·113	37·025	1·215	·999	·254	9·290	..	..	..	..	..	traces	1·330	trace	50·113	..	..	
31	Gidgen Camp Bore	47·568	30·712	3·347	1·299	·267	10·431	..	..	..	..	..	·168	1·344	trace	47·568	..	..	
32	*Clifton Bore	125·832	98·180	1·644	1·699	·953	21·480	..	..	..	..	..	..	1·708	trace	125·832	..	..	
33	Merce Bore	49·782	39·259	1·101	·842	·295	7·029	..	..	..	..	..	trace	1·456	trace	49·782	..	..	
34	†Osaca Bore	73·507	56·508	2·437	·899	·609	11·368	..	..	..	..	..	traces	1·596	trace	73·507	..	..	
35	Carabulla Bore	58·659	43·212	·940	1·499	·678	10·818	..	..	..	..	..	traces	1·512	trace	58·659	..	..	
36	Mulgary Bore	51·713	37·599	2·370	1·149	·127	8·788	..	..	..	..	..	traces	1·680	trace	51·713	..	..	
37	Wanaaring Bore	50·627	35·792	1·280	1·299	·190	10·356	..	..	..	..	..	traces	1·680	trace	50·627	..	..	
38	†Sandy Creek Bore.	160·135	..	..	..	5·185	108·914	3·886	6·687	28·118	6·477	..	..	·280	·558	160·135	..	..	
39	Brigalow Bore	45·387	31·254	2·674	·914	trace	7·647	..	..	..	..	..	·476	1·540	·882	45·387	..	..	
40	Woolabra Bore	44·169	31·572	3·259	·299	·180	6·049	..	..	..	..	..	·308	2·492	..	44·169	..	..	

\*The soluble saline matter consists mainly of Carbonate of Soda.

## D 1.

ANALYSES of Artesian Waters which, if used with care, are suitable for Irrigation purposes.

No.	Locality.	Grains per Imperial Gallon.				Organic Matter.
		Total Solid Matter, Dried at 220° F.	Sodium and Potassium Carbonates.	Common Salt, &c	Carbonates of Lime and Magnesia, Silica, &c., S <sub>2</sub> O <sub>3</sub> .	
2	Fort Bourke (private) Bore .....	53·768	33·923	10·970	8·875	.....
3	Bourke Bore .....	34·298	23·892	8·445	1·960	.....
4	Corrella Station, No. 1 Bore (private) .....	46·340	34·983	8·733	2·624	.....
5	Youngerrina Bore .....	32·984	approximate 34·696	8·404	approximate 2·000	.....
6	Native Dog Bore .....	45·108	approximate 36·729	7·315	approximate 1·064	.....
11	Sibraas Bore.....	70·112	33·240	30·321	5·347	1·204
12	Kelly's Camp Bore .....	35·081	22·562	7·907	2·201	2·436
14	Yantabulla Bore .....	39·996	23·984	9·557	3·935	2·520
15	Emgonia Bore .....	47·650	35·108	7·745	2·893	1·904
16	Belalie Bore .....	39·784	29·042	7·909	1·909	·921
17	Kerribre Creek Bore .....	34·355	23·973	7·745	1·629	1·008
18	Barrungim Bore .....	39·113	30·036	6·739	2·338	.....
19	Corrella Bore (No. 2, private) .....	50·316	36·898	11·205	2·212	.....
20	" " (No. 3, " ) .....	56·868	37·839	7·745	11·254	.....
21	Waroo Spring Bore.....	36·794	23·769	8·404	2·753	·868
24	Pera Bore .....	45·076	34·343	7·690	2·567	·476
27	Boatman's Bore (private) .....	34·154	17·745	14·288	2·121	.....
31	Walkden's Bore .....	50·113	38·240	9·290	2·563	.....
32	Gidgea Camp Bore .....	47·568	34·059	10·431	3·078	.....
34	Moree Bore .....	49·782	40·360	7·029	2·393	.....
36	Curabulla Bore.....	58·659	44·152	10·818	3·689	.....
37	Mulgary Bore .....	51·713	39·969	8·788	2·956	.....
38	Wanaaring Bore .....	50·627	37·072	10·386	3·169	.....
40	Brigalow Bore .....	45·387	34·018	7·647	2·940	·882
41	Woolabra Bore.....	44·169	34·831	6·049	3·289	.....

## D 2.

\* ANALYSES of various American Waters.

No.	Locality.	* Grains per Imperial Gallon.				
		Total Solid Matter.	Sodium Carbonate Na <sub>2</sub> CO <sub>3</sub> .	Common and Glaubers Salt.	Carbonates of Lime, Magnesia, and Silica.	Vegetable Matter.
1	Los Angeles River .....	21·036	.....	10·044	10·992	.....
2	Kern River (canon).....	11·388	1·464	2·124	6·666	1·130
3	Kern River (ditch) .....	11·544	1·476	2·652	6·396	1·020
4	Kern Lake .....	253·800	77·244	138·492	11·148	26·916
5	Tulare Lake (south end) .....	101·328(?)	33·504	45·420	16·128	2·676
6	Tulare Lake (middle surface) .....	98·340	42·360	43·152	6·444	6·384
7	Tulare Lake (10 ft. below surface) .....	98·196	36·552	47·388	8·964	5·292
8	Tulare Lake (20 ft. below surface) .....	98·064	.....	.....	.....	.....
9	Tulare Lake (near mouth of King's River).....	46·260	16·152	18·012	6·132	5·964
10	Tulare Lake .....	91·200	37·140	40·740	7·920	5·400
11	King's River (June) .....	4·944	0·000	1·032	3·924	.....
12	King's River (November) .....	6·036	.....	.....	.....	.....
13	San Joaquin River .....	5·448(?)	0·540	0·180	2·580	1·068
14	Merced River .....	6·768(?)	0·228	·098	5·016	.....
15	Mokelumne River .....	8·364(?)	.....	·504	5·304	4·440
16	Sacramento River .....	8·023	0·324	1·704	6·020	.....

\* Waters, Water Supply, &amp;c., by Professor Hilgard, University of California, 1889.

NOTE.—United States gallon = 53,318 grains or 231 cubic inches. Imperial gallon = 70,000 grains or 277·2738 cubic inches.

## D 3.

\* ANALYSES of waters (Artesian) from different places in California—Grains per Imperial gallon.

No.	Locality.	Total solid matter per Imperial gallon.	Sodium Carbonate Na <sub>2</sub> CO <sub>3</sub>	Sodium Chloride Na. Cl.	Remarks.
1	Tulare County, E. Jacob.....	25·92	19·932	.....	Amount of Sodium Carbonate present not given.
2	Tulare County, E. M. Dewey .....	11·988	3·360	.....	
3	Tulare County, D. Madden .....	6·900	3·552	.....	
4	Tulare County, T. Paige .....	14·46	10·26	·480	
5	Stockton, Salmon .....	284·52	.....	148·980	
6	Stockton Asylum .....	41·268	14·065	16·440	
7	Upper Lake Country.....	13·92	Small	Chiefly	
8	Delano Station, Kern County .....	12·192	Small	Some	
9	Stockton Asylum .....	43·92	.....	.....	
10	Tulare County.....	9·360	Some	Chiefly	
11	Lemore, Tulare County, E. Jacobs .....	32·100	23·16	Much	
12	Lemore Tulare County, D. Rhoads .....	32·376	Chiefly	Much	
13	Bell Station Well .....	66·577	24·791	7·232	† This water is used for all domestic purposes. It is also used for sprinkling lawns. It has not been largely used for irrigation, but so far has proved very healthful to all vegetation.
14	.....	.....	.....	.....	

\* Waters and Water Supply, &c., by Prof. Hilgard, University of California, 1889.  
† Report by S. H. Pope, Secretary, Waco Board of Trade, 7th July, 1891.

E.

[To Evidence of H. C. Russell, Esq., C.M.G., B.A.]

AVERAGE DISCHARGE OF RIVER AT BOURKE, EVAPORATION, PERCOLATION, AND RAINFALL OVER THE DARLING CATCHMENT AREA.

Sir,

Sydney Observatory, 5 June, 1896.

I am sorry for the delay in supplying the information you desire, but I did not get the Queensland data until 2nd June, and since that date I have made all speed to get the information desired.

Taking the average river at Bourke for fifteen years, it comes out an average for the year 10 feet 1 inch at Bourke. That represents a discharge of 2,350,000,000 tons of water passing Bourke per annum; this represents water equivalent to a rainfall of 0.30 inch, or 30 points as it is commonly called, over the watershed. Average actual discharge of river at Bourke

The average rainfall for the same period (I omit 1890, because the flood could not be measured) of fifteen years 23.81 inches. I have really no means of ascertaining the loss by evaporation and vegetation. In Europe about two-thirds of the rainfall is lost by evaporation and percolation. The Murray carries away 30 per cent. of the rain; it is therefore similar to the average European river. We may then I think assume that the Darling would, but for special percolation, carry off 30 per cent. of 23.81 inches rain, that is 7.04 inches over the watershed.

In reply to the questions at the meeting of Committee when I was examined, I have shown that the highest river on record (average for year), 29 feet 1 inch average flood, only carried off the equivalent of 1 inch of rain over the watershed. On the assumption we have made above, that is, that it should, in order to be like other rivers, carry off 7 inches of rain, it is obvious that there ought to be water for seven rivers as big as the Darling at Bourke in 1879, that is—equal in cross section to the Darling at Bourke, and an average depth of water of 29 feet.

Now an inch of water over the Darling catchment is equal to 771,836,000 tons of water.

My section of the river is for Bourke only, and the only river feeding the Darling, at or rather between Brewarrina and Bourke that I have measures of is the Culgoa, and of that I have no section, and measures only at Goodooga, so that I cannot say how much water the Culgoa discharges into the Darling, but assuming that it discharges the same proportion of the rainfall that the whole catchment of the Darling above Bourke does, which is I think a fair assumption, although the map shows that some of the rivers that ought to discharge into the Culgoa run out on to plains and are lost; probably it is safe to neglect these as the area is not large, about two square degrees. Including these, the Culgoa on the above assumption, viz., that it discharges the same proportion of its rainfall that the whole catchment of the Darling above Bourke does, the quantity of its discharge into the Darling amounts on the assumptions made to 1,175,000,000 tons of water. The whole quantity passing Bourke I make 2,350,000,000 tons per annum. The average rainfall on the Culgoa is 30.28 inches and in New South Wales Tributaries 24.59 inches. Estimated discharge of the Culgoa.

As to the quantity that in times of big floods would come in I do not see any way to arrive at it because the river overflows its banks, but to continue the process of estimating I should think at least three times as much in each, that is from the Culgoa and the Darling.

The loss from the soil by evaporation I have endeavoured to estimate in the first part of this letter that it is probably two thirds of the rainfall. To arrive at it exactly would be a difficult matter, and require years of experiment. I will think the matter over again, and if anything occurs to me which might be of use to you I will send it. Two-thirds of rainfall lost in all probability would still leave seven times as much as passed Bourke in 1879.

As to the amount of percolation.

Lake George furnishes some data of value in estimating the quantity of rainfall that becomes running water. The lake is situated in the main range, and the elevation of its surface water is 2,200 feet above mean sea-level. Since February, 1885, I have had on it a self-recording gauge which shows every change of level; and this shows that in all ordinary rains—1 to 2 inches—the lake gets nothing from its catchment, the rise in such rains being just equal to the rainfall. Early in 1885, a very heavy rain storm passed over the lake, which the various rain gauges about slow to have been 8 inches to 9 inches; assuming, therefore, that the average fall over the catchment was the smaller quantity—8 inches—I find that the lake rose only 1½ inches, that is, 3½ inches more than that which fell directly into it. The catchment of the lake is twelve times the area of the lake; and since the lake rose from the drainage of this exceptional storm—only 3.5 inches—it follows that ¾ or 0.29 inches over the catchment is the quantity out of 8 inches of rain, that is, 3 per cent., which found its way into the lake. It must be borne in mind that on both sides of the lake the hills rise abruptly from the water, and that they are for the most part rocky, and with very little soil over them, and that they form a continuation of the range from which the main supply of water for the Darling comes. The country was dry when this storm came on, for it was in the great drought of 1884-5-6, and it shows how much of the rain may disappear even on the mountains, and bears out the experience on the Darling, where such a small fraction of the rain finds its way into the river.

RESULTS of Experiments in England to determine the proportion of the Rainfall which sinks down to feed the underground supply.

When in England I visited Rothamstead, in order to make myself acquainted with the work which has been done there for Sir James Lawes; they have been extremely costly. Dr. Gilbert, F.R.S., a gentleman of great ability, supported by a small army of assistants and the unlimited funds supplied by Sir James Lawes, has carried on a work there for about fifty years, which is unequalled by that done in any other part of the world, even where such experiments have been carried out for Governments.

One of the questions which it was determined to investigate was—How much of the rainfall sinks down to the underground waters? In order to test this, three brick and cement chambers were constructed, each having an area of soil equal to one thousandth of an acre, that is, 6 feet 7 inches x 6 feet 7 inches, the tops of these were 2 in. above the soil, to prevent water running in. The first had in it 20 inches of soil; the second 40 inches; and the third 60 inches. In each case the bottom was provided with a number of pipes which lead the water to the same outlet. Where the water was protected from evaporation and measured at regular intervals several ordinary rain gauges were placed near.

I asked if, in each case, a mass of soil in its virgin state had been cut out and lifted bodily into the prepared chambers; Dr. Gilbert said no, that was unnecessary, for he had found by experiment that soil that has been broken up settles down under rain and ordinary circumstances to a condition which was so far as these experiments were concerned to all intents and purposes equivalent to that of virgin soil.

When I was there in 1887, the result of sixteen years work on these experiments was available, and it was found that the gauge with 20 inches of soil allowed to pass through 48 per cent. of the rain; 40 inches of soil allowed to pass through 50 per cent. of the rain; 60 inches of soil allowed to pass through 45 per cent. of the rain.

The fact that the 40-in. gauge allows more water to pass through than the 20-in. gauge, shows that the soil in the two was not exactly alike, but the average of the three shows that from 40 to 45 per cent. of the rain went to underground water supply.

AVERAGE Rainfall over the Darling Catchment Area.

New South Wales.		Queensland.	
1879.....	33.71	1888.....	12.05
1880.....	20.74	1889.....	30.31
1881.....	18.88	1890.....	36.36
1882.....	23.92	1891.....	29.60
1883.....	15.30	1892.....	25.55
1884.....	14.75	1893.....	26.00
1885.....	18.86	1894.....	25.50
1886.....	29.00		
1887.....	32.99	Mean.....	24.59

The main rainfall for each station is supplied, hence it is not possible to get the rainfall for each year separately; the returns come up to the end of 1894.

Darling catchment area in Queensland.  
Mean..... 30.28

I have, &c.,  
H. C. RUSSELL.

The Chairman, Parliamentary Standing Committee on Public Works.

## F.

STATISTICS OF TWO GROUPS OF BORES.—STATEMENT BY J. W. BOULTBEE, ESQ.

Group.	Bore.	Road.	Depth in feet.	Boring rate per foot.	Cost of boring.	Cost of casing.	Total cost.	Flow in gallons per day.	Area that could be irrigated.	Cost of water per acre.
I.	Pera .....	Bourke to Wanaaring .....	1,154	22s.	£ 1,267 8 0	£ 244 15 0	£ 1,512 3 0	610,000	282	£ 5 7 2
	Sibraas .....	" .....	1,059	"	1,164 18 0	391 9 9	1,556 7 9	700,000	324	4 9 1
	Kelly's Camp .....	Bourke to Hungerford .....	1,577	"	1,734 14 0	369 13 2	2,104 7 2	600,000	277	7 11 11
	Kerribree Creek .....	" .....	1,193	"	1,312 6 0	245 16 0	1,558 2 0	800,000	370	4 4 2
	Totals .....		4,983	...	5,479 6 0	1,251 13 11	6,730 19 11	2,710,000	1,253	.....
II.	Wanaaring .....	Wanaaring .....	1,644	22s.	1,808 8 0	143 1 0	1,951 9 0	400,000	185	10 10 11
	Osacca .....	Wanaaring to Milparinka .....	1,646	"	1,810 12 0	558 3 7	2,368 15 7	350,000	162	14 12 5
	Clifton .....	" .....	1,638	"	1,801 16 0	656 8 8	2,458 4 8	2,000,000	925	2 13 1
	Tinaroo .....	" .....	1,703	"	1,873 6 0	360 11 1	2,233 17 1	500,000	231	9 13 4
	Totals .....		6,631	...	7,294 2 0	1,718 4 4	9,012 6 4	3,250,000	1,503	.....
III.	Euroka .....	Walgett to Coonamble .....	1,543	22s.	1,697 6 0	348 7 1	2,045 13 1	3,000,000	1,388	1 9 5

J. W. B.—17/7/96.

## G.

[To Evidence of Alexander Oliver, Esq., M.A.]

## RIPARIAN RIGHTS, ENCRAGEMENTS, PRESCRIPTION, ADOPTION OF COMMON LAW.

LORD HALE, in the treatise generally attributed to him (*De jure maris et Brachiorum ejus*), lays down the law thus: "Fresh rivers of what kind soever, do, of common right, belong to the owners of the soil adjacent, so that the owners of the one side have, of common right, the propriety of the soil, and the owners of the other side, the right of soil or ownership, unto the *flum aquæ* on their side. And if a man be owner of the land on both sides, in common presumption he is owner of the whole river according to the extent of his land in length." The existing law is no more than an evolution from the law as thus enunciated.

"It is a settled principle in the English law that the right of soil of owners of land bounded by the sea, or on navigable rivers where the tide ebbs and flows, extends to high-water mark; and the shore below common, but not extraordinary high-water mark, belongs to the State as trustee for the public; and in England the Crown, and in this country the people, have the absolute proprietary interest in the same, though it may, by grant or prescription, become private property. The public have, at common law, a right to navigate over every part of a common navigable river, and on the large lakes; and in England, even the Crown has no right to interfere with the channels of public navigable rivers. They are public highways at common law. The Sovereign is trustee for the public, and the use of navigable rivers is unalienable. But the shores of navigable waters, and the soil under them, belong to the State in which they are situated as Sovereign. The right of Sovereignty in public rivers above the flow of the tide is the same as in tide waters; they are *juris publici*, except that the proprietors adjoining such rivers own the soil, *ad flum aquæ*. But grants of land, bounded on rivers or upon the margins of the same, above the tide water, carry the exclusive right and title of the grantee to the centre of the stream, unless the terms of the grant clearly denote the intention to stop at the edge or margin of the river; and the public, in cases where the river is navigable for boats and rafts, have an easement therein, or a right of passage, subject to the *jus publicum* as a public highway. The proprietors of the adjoining banks have a right to use the land and water of the river as regards the public in any way not inconsistent with the easement; and neither the State nor any other individual has a right to divert the stream and render it less useful to the owner of the soil. It would require an express exception in the grant, or some clear and unequivocal declaration, or certain an immemorial usage, to limit the title of the owner, in such cases, to the edge of the river. Where a stream is used in a grant as a boundary or monument, it is used as an entirety to the centre of it, and to that extent the fee passes. *Primâ facie*, said the Vice-Chancellor of England (in *Wright v. Howard*, 1 Sim. & Stuart 190), the proprietor of each bank of a stream is the proprietor of half the land covered by the stream. If the same person be the owner of the lands on both sides of the river, he owns the whole river to the extent of the length of his lands upon it." 3 *Kent's Commentaries*, p. 545, 9th Ed.

In 1858, in the case of *Miner v. Gilmour*, which was an appeal from the Court of Queen's Bench, in Lower Canada, Lord Kingsdown, delivering the judgment of the Judicial Committee (12 Moore's Privy Council Reports, at page 156), laid down the law of England, which was practically the same as the French-Canadian law, thus: "By the general law applicable to running streams, every riparian proprietor has a right to what may be called the ordinary use of the water flowing past his land; for instance, to the reasonable use of the water for his domestic purposes, and for his cattle, and this without regard to the effect which such use may have in case of a deficiency upon proprietors lower down the stream. But, further, he has a right to the use of it for any purpose, or what may be deemed the extraordinary use of it, provided that he does not thereby interfere with the rights of other proprietors, either above or below him. Subject to this condition, he may dam-up the stream for the purpose of a mill, or divert the water for the purpose of irrigation. But he has no right to interrupt the regular flow of the stream, if he thereby interferes with the lawful use of the water by other proprietors, and inflicts upon them a sensible injury." Since the delivery of this judgment English judges have always recognised the right of a riparian proprietor to extraordinary as distinguished from ordinary use of the water of a running stream. [And cf. *Lord Norbury v. Kitchen*, 9 Jurist (N.S.), p. 132; *Stockport Waterworks v. Potter*, 3 H. & C., 300; *Ormerod v. Todmorden, &c.*, L.R. 11, Q.B.D. 155.]

In the year 1859 an important case went on appeal from our own Supreme Court to the Privy Council, and is reported in the 12th volume of the P. C. Reports, p. 473. In that case (*Lord v. the Commissioners for the City of Sydney*) the Privy Council held, reversing the judgment of the Supreme Court, that a Crown grant made in 1810 of land bounded by a non-navigable creek passed the soil of the creek *ad medium flum aquæ*, inasmuch as the description of boundaries in the grant did not exclude from it that portion of the creek which, by the general presumption of law, would go along with the ownership of the land on the banks of the creek. The City Commissioners (the respondents) had appropriated, under Act of Parliament, the water of this creek, and by diverting it materially diminished the quantity, withdrawing the supply by which the mill was worked, and the stream in general which was used for woolwashing and other purposes, besides that of turning a mill. The law, as laid down by Chancellor Kent in the passage already quoted, was adopted by Sir John Coleridge in delivering judgment, who said, "Tried according to these principles (*i.e.*, those laid down by Kent), it appears clear to their Lordships that the description of the boundaries in this grant does not exclude from it that portion of the creek which, by the general presumption of law, would go along with the ownership of the land on the bank of it. The Crown had the power of granting it; no reason can be assigned why it should have reserved what might be directly and immediately useful to the grantee, and could scarcely have been contemplated as of any probable use to the Crown, and thus, too, in an infant colony where it was the manifest and avowed policy to encourage settlement and the cultivation of land by grants on the easiest and most favourable terms." [See also *Tilbury v. Silva*, L.R. 45 Ch., Div. 98.]

In 1851, Baron Parke, in *Embrey v. Owen*, 6 Exch. Rep., p. 360, said, "The law as to flowing water is now put on its right footing by a series of cases beginning with *Wright v. Howard*, 1 Sim. and S. 190, followed by *Mason v. Hill*, 3 B. and Ad.

Ad. 304, and ending with *Waud v. Waud*, 3 Exch. 748, and is fully settled in the American Courts, see 3, Kent's Commentaries, sect. 52, pp. 439-445," and that most learned and accurate Judge proceeded to quote from Kent the passage following:—And it is an exposition of the law which has frequently been since adopted in English Courts.

"Every proprietor of lands on the banks of a river has naturally an equal right to the use of the water which flows in the stream adjacent to his lands, as it was wont to run (*currere solebat*) without diminution or alteration. No proprietor has a right to use the water to the prejudice of other proprietors, above or below him, unless he has a prior right to divert it, or a title to some exclusive enjoyment. He has no property in the water itself, but a simple usufruct while it passes along. *Aqua currit et debet currere ut currere solebat*, is the language of the law. Though he may use the water while it runs over his land as an incident to the land, he cannot unreasonably detain it or give it another direction, and he must return it to its ordinary channel when it leaves his estate. Without the consent of the adjoining proprietors, he cannot divert or diminish the quantity of water which would otherwise descend to the proprietors below, nor throw the water back upon the proprietors above, without a grant, or an uninterrupted enjoyment of 20 years, which is evidence of it. This is the clear and settled doctrine on the subject, and all the difficulty which arises contests in the application. The owner must so use and apply the water as to work no material injury or annoyance to his neighbour below him, who has an equal right to the subsequent use of the water, nor can he, by dams or any obstruction, cause the water injuriously to overflow the grounds and springs of his neighbour above him. Streams of water are intended for the use and comfort of man; and it would be unreasonable, and contrary to the universal sense of mankind, to debar every riparian proprietor from the application of the water to domestic, agricultural, and manufacturing purposes, provided the use of it be made under the limitations which have been mentioned; and there will, no doubt, inevitably be, in the exercise of a perfect right to the use of the water, some evaporation and decrease of it, and some variations in the weight and velocity of the current. But *de minimis non curat lex*, and a right of action by the proprietor below, would not necessarily flow from such consequences, but would depend upon the nature and extent of the complaint or injury, and the manner of using the water. All that the law requires of the party, by or over whose lands a stream passes, is that he should use the water in a reasonable manner, and so as not to destroy, or render useless, or materially diminish, or affect the application of the water by the proprietors above or below on the stream. He must not shut the gates of his dams and detain the water unreasonably, or let it off in unusual quantities to the annoyance of his neighbours. Pothier lays down the rule very strictly, that the owner of the upper stream must not raise the water by dams so as to make it fall with more abundance and rapidity than it would naturally do, and injure the proprietor below. But this rule must not be construed literally, for that would be to deny all valuable use of the water to the riparian proprietors. It must be subjected to the qualifications which have been mentioned, otherwise rivers and streams of water would become utterly useless, either for manufacturing or agricultural purposes. The just and equitable principle is given in the Roman law: *Sic enim debere quem meliorem agrum suum facere, ne vicini deteriores faciat.*"

In 1893, in a very carefully-considered judgment, the Land Appeal Court of this Colony held, upon the authority of the last-cited case, and of *Micklethwaite v. Newlay Bridge Company*, L.R. 23 Ch., Div. 133, that a Crown grant made in 1803 of land "on the river Nepean" passed to the owner of the land so granted the soil of the river *ad medium filum aque*. (*In re Waldron*, 3 L.C.C., p. 144.) The Court found in that case that at the point in question the river Nepean was both in law and in fact a non-navigable river; but as to whether the presumption of *ad medium filum* ownership could apply to a navigable river (like *e.g.* the Darling) the Court expressed no opinion.

But, by a series of cases in the English Courts, it may now be considered as settled law that the presumption of law is, as to tidal rivers (and these alone are *in law* considered to be navigable), that the soil or *fundus* is vested in the Crown, while the presumption as to non-tidal or non-navigable rivers is that the soil belongs *ad medium filum* to the riparian owners. [See as to this per Lord Selborne in *Lyon v. Fishmonger Company*, L.R., H.L. 1, at p. 682.] "The most material differences (said his Lordship) between the stream above and the stream below the limit of the tides are that in an estuary or arm of the sea there exist, by the common law, public rights in respect of navigation and otherwise which do not generally, in this country, exist in the non-tidal parts of the stream; and that the *fundus* or bed of the non-tidal parts of the stream belongs generally to the riparian proprietors, while in the estuary it belongs generally to the Crown." [See also per Lord Wensleydale in *Chasemore v. Richards*, 7 H.L.C., 349; and *North Shore Railway Co. v. Pion*, 14 H.L.C., 612.]

The English common law rule of riparian ownership above tide has been adopted in America, in the States of New York, Massachusetts, New Hampshire, Connecticut, Maine, Maryland, Virginia, Ohio, Indiana, Illinois. In some States, such as Pennsylvania, Tennessee, N. and S. Carolina, and Alabama, the rule of the common law rule has been held inapplicable.

But the *Court of Errors*, N.Y., in *Commissioners of Canal Fund v. Kempshall*, 26 Wend. (N.Y.) 404, is the most elaborate and learned decision on the question, and it decides in favour of *ad medium filum* ownership above H.W. mark in navigable inland rivers.

(1866.) Upon the question of encroachment by one riparian proprietor on the alveus of a stream, and how far the same can be resisted by another, *Bickett v. Morris*, L.R. 1, Sc. App. 47, is an important authority. *Bickett v. Morris* has recently been explained and distinguished by Cotton, L.J., in *Kensit v. G. E. Railway Co.*, L.R. 27 Ch., Div. p. 131:—"What was decided in that case (said Lord Justice Cotton) was that what interferes with the channel of the river was a matter which would be actionable unless the Court were satisfied that there would not be any injury resulting from it either then or at a future time; and in such a case as the flow of water, which is so difficult to deal with, it would be a difficult case to determine whether what had been done would or would not produce any injury. If there was a reasonable prospect that it would produce any damage to the opposite or lower riparian owners, then that would give a right of action, although no actual injury was shown to have resulted from it." [In these cases the act complained of was not in the nature of a public nuisance.]

(1875.) Lord Cairns (L.C.) in *Swindon Water Co. v. Wilts and Berks Canal*, L.R. 7, H.L. 697, laid down the law thus:—"Undoubtedly the lower riparian owner is entitled to the accustomed flow of the water for the ordinary purposes for which he can use it; that is quite consistent with the right of the upper owners also to use the water for all ordinary purposes, whatever portion of the water may thereby be exhausted, and may cease to come down by means of that use. But, further, there are uses no doubt to which the water may be put by the upper owners, *e.g.*, uses connected with the tenement. Under certain circumstances, and provided no material injury is done, the water may be used, and may be diverted for a time by the upper owner for the purpose of irrigation. This may well be done, and the exhaustion of the water which may thereby take place may be so inconsiderable as not to form a subject of complaint by the lower owner, and the water may be restored, after the object of irrigation is answered, in a volume substantially equal to that in which it passed before. Again, it may well be that there may be a use of the water by the upper owner, for, I will say, manufacturing purposes, so reasonable that no just complaint can be made on the subject by the lower owner. Whether such a use in any particular case could be made for manufacturing purposes connected with the upper tenement would, I apprehend, depend upon whether the use was a reasonable use. Whether it was a reasonable use would depend, at all events in some degree, on the magnitude of the stream from which the deduction was made for this purpose over and above the ordinary use of the water.

Upon this, Coulson and Forbes' "On Waters," comment thus:—"A riparian owner is, therefore, at liberty to pen back and divert temporarily the waters of a stream flowing through his lands in a reasonable way, and for reasonable purposes connected with his tenement, provided he does not thereby injure his neighbours, and no action will lie for such obstruction unless the complainant can prove actual damage. Where, however, the purpose for which the water is taken is not reasonable, or not a use connected with the riparian tenement, the taking is an invasion of a right of property; and whenever an injury is done to a right, actual perceptible damage is not indispensable as the foundation of an action, but it is sufficient to show the violation of the right, and the law will presume damage. (*Embrey v. Owen*, 6 Exch. 353, per Parke B, p. 363, *Swindon Water Co. v. Wilts and Berks Canal*, *ubi supra*.)

So Lord Blackburn in *Orr Ewing v. Colquhoun* (2 App. Ca. 556, with which cf. *Miner v. Gilmour*, 12 Moore, P.C. 131), said:—"The owner on the banks of a non-navigable stream has an interest in having the water above him flow down to him, and in having the water below him flow away from him as it has been wont to do; yet I apprehend that a proprietor may, without any illegality, build a mill-dam across the stream within his own property, and divert the water into a mill-lade without asking leave of the proprietors above him; provided he builds it at a place so much below the lands of those proprietors as not to obstruct the water from flowing away as freely as it was wont, and without asking leave of the proprietors below him, if he takes care to restore the water to its natural course before it enters their land,

Whether

Whether a riparian proprietor may use the water of a stream for the purposes of irrigation, if he again return it to the stream with no other diminution than that caused by the evaporation and absorption attendant on irrigation, appears to depend on the circumstances of each particular case. Thus, in *Embrey v. Owen* (*ubi supra*), where it was proved that the diversion was not continuous, and that it caused no diminution cognizant to the senses, the Court held that this was not, under the circumstances, such an unreasonable use as to be prohibited by law. Where the defendant diverted water from a river for the purposes of irrigation, and the amount of water was not thereby diminished, but the water arrived so late at the plaintiff's land below that he could not use it fully for irrigation purposes, it was held that this detention of the water by the defendant was a use of it which was in its character necessarily injurious to the natural rights of the plaintiff as a riparian owner, and therefore a ground of action.

(1876.) In *Lyon v. Fishmonger's Coy.*, L.R. 1 App. Ca., the point which the Privy Council did not care to decide in *Lord v. The Commissioners of the City of Sydney* (*ubi supra*) was finally determined, their Lordships holding that the right of a riparian owner to the use of the stream did not depend on the ownership of the soil of the stream.

A watercourse has been defined judicially to be *flumen vel cursus aqua*, water flowing in a channel between banks more or less defined. It is not, however, necessary to constitute a watercourse that the water should flow continually, as a channel may be occasionally dry, but it must appear that the water flows usually in a regular channel, and has a well-defined and substantial existence, the law making a distinction between a regular flowing stream which at certain seasons is dried up, and those occasional bursts of water which in times of freshets and melting of snows descend from the hills and inundate the country. It might be a question whether the Bogan, Warrego, or Paroo is in law a watercourse, but the evidence would probably point in the affirmative, although each appears only to be a stream in time of flood; but if a rainfall which is not heavy enough to produce a general inundation of the adjoining country causes the Warrego or Paroo to flow between banks capable of being defined, it would appear to be a watercourse for all riparian purposes.

Every watercourse, according to a very learned authority on the subject (the American text writer, Mr. Angell), consists of—1, the bed; 2, the bank or shore; 3, the water. The bed of a river, said Lord Campbell, is the *alveus*, as distinguished from the shore and from places where flood-waters occasionally collect. The bank is the outermost part of the bed in which the river naturally flows.

With regard to the applicability of the Common Law as laid down by English Courts to the circumstances of this Colony, it may be observed that colonists from England carry with them from the mother country so much of the Common Law and the Statute Law as is applicable to their new situation, also they enjoy the rights and immunities of British subjects (per Lord Wensleydale, in *Kielly v. Carson Moore*, P.C., 84).

And cf. here, sec. 24 of 9 Geo. IV, c. 83, which enacts "All laws and statutes in force within the realm of England (at 25th July, 1828) shall be applied in the administration of justice . . . so far as the same can be applied . . . and as often as any doubt shall arise as to the application of any such laws or statutes, it shall be lawful for the Queen, by and with the advice of. &c. &c., to declare whether such laws or statutes shall be deemed to extend to New South Wales, &c. . . as to make and establish such limitations and modifications of any such laws and statutes . . . as may be deemed expedient. Provided always that in the meantime and before any such ordinances shall be actually made, it shall be the duty of the Supreme Court, as often as any such doubts shall arise, upon the trial of any information, or action, or upon any other proceeding before them, to adjudge and decide as to the application of any such laws or statutes, . . . &c."

In *Cooper v. Stuart*, 14 App. Ca. 286-291, Lord Watson said:—"The extent to which English law is introduced into a British Colony, and the manner of its introduction, must necessarily vary according to circumstances. There is a great difference between the case of a Colony acquired by conquest or cession in which there is an established system of law, and that of a Colony which consisted of a tract of territory practically unoccupied, without settled inhabitants, or settled law, at the time when it was peacefully annexed to the British dominion. The Colony of New South Wales belongs to the latter class. In the case of such a Colony the Crown may, by ordinance and the Imperial Parliament, or its own Legislature, when it comes to possess one, may by statute declare what parts of the common and statute law of England shall have effect within its limits. But when that is not done the law of England must (subject to well-established exceptions) become from the outset the law of the Colony, and be administered by its tribunals. In so far as it is reasonably applicable to the circumstances of the Colony, the law of England must prevail until it is abrogated or modified either by ordinance or statute." As to the limitation of applicability or otherwise, Lord Cranworth, in *Whicker v. Hume*, 7 H.L.C., 124, said:—"Nothing is more difficult than to know which of our laws is to be regarded as imported into our Colonies. Who is to decide whether any law is adapted to the situation of the Colony?"

On this cf., Westlake's Private International Law, p. 137. Webb says:—"Thus the artificial right of riparian proprietor to the river-bed, *ad medium filium* (unless expressly reserved), holds in a new Colony where it is suitable to the circumstances; that is where the object is to encourage settlement and the cultivation of the land by grant on the easiest and most favourable terms from the Crown, in whom full right is vested." (*Lord v. Commissioners of Sydney*, 12 Moore, P.C. 498.) (Webb's Imperial Law, 2nd Ed., p. 21.)

Mr. Webb thinks that the true effect of 9 Geo. IV, c. 83, sec. 24 is "that it introduced all the laws, &c., of England into New South Wales that could be reasonably applied to New South Wales in 1828, and would, so far as they can be reasonably applied, when the question arises."

Prescription regulated in England by 2 and 3 Wm. IV, c. 71 (not adopted here), therefore, any prescription in New South Wales must be by common law, and so it might be held there must be (1) actual user; (2) constant and peaceable user; (3) usage from *time immemorial*, i.e., the beginning of Richard I reign; (4) must be certain and reasonable; (5) must be laid in a man and those whose estate he hath, or in a man and his ancestors, &c., &c. Every prescription presumes that a grant has issued and been lost, and therefore the thing must be a grantable one.

Kent says, at p. 574, "The natural right to the use of water (riparian rights at common law) may be abridged or enlarged or modified by *grant or prescription*. Though a stream be diminished in quantity, or corrupted in quality, by means of the exercise of certain trades, yet if the occupation of the party so taking or using it has existed for so long a time as to raise the presumption of a grant, and which presumption is the formation of title by prescription, the other party, whose land is below, must take the stream subject to such adverse right; and 20 years exclusive enjoyment of the water in any particular manner affords, according to the English law, and the law of New York, Massachusetts, and several other States, presumption of such a grant," and see the note (c) to the text in Kent [Probably in this Colony, when the question of prescription at common law shall be raised for definitive adjudication, it will be held, by analogy to the principles adopted in American Courts, that the same period which destroys a right of entry on land under the Statute of Limitation ought to be presumed to have created a prescriptive right to a water easement. This opinion is submitted on the ground that the principle of "Prescription" would be recognised by our Courts, and, in the absence of any statutory regulation of that principle as in England, and the impossibility of introducing in a Colony the common law fiction of immemorial usage or legal memory, that the Courts would adopt the Statute of Limitation principle which so many of the Supreme Courts of the American States have adopted.]

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

MINUTES OF EVIDENCE.

CONSTRUCTION OF LOCKS AND WEIRS ON THE RIVER DARLING.

TAKEN BEFORE THE SECTIONAL COMMITTEE.

MONDAY, 22 JUNE, 1896.

[The Sectional Committee met at the Pera Bore Settlement, at 3 p.m.]

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (CHAIRMAN).

THE HON. WILLIAM JOSEPH TRICKETT.  
CHARLES ALFRED LEE, Esq.

THOMAS HENRY HASSALL, Esq.  
GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Sectional Committee proceeded to consider the proposed Construction of Locks and Weirs on the River Darling.

Mr. Frederick Hersey, farmer, Pera Bore Settlement, sworn, and examined:—

*To the Chairman:* Before I came to the Pera Bore Settlement I was at Louth, where I commenced operations in 1892. My chief market while at Louth was the shearing sheds. I supplied the sheds for 30 miles round with vegetables. I had 3 acres of land under cultivation at Louth, and was working on my brother's place. I used a wool-scouring plant that was there, and I had a Tanyce pump with a 3-inch delivery. When the river was low I had to lift the water 40 feet.

*To Mr. Black:* There was any quantity of wood close at hand which I used to supply the furnace. If I had employed an engine driver, the working of the pump would not have cost less than £75 a year. I found that once the native weeds were killed, the ground did not require very much cleaning. Two hoeings a year kept it perfectly clean. Root crops, such as carrots, parsnips, and turnips, did remarkably well, while some of my cabbages averaged 20lb. in weight. I could not have irrigated more than 4 acres with the pumping appliances I had at Louth. It would cost about £130 to irrigate there but a portable engine and boiler would have done the work much better. During the first year I was by myself; but for the last three years I employed a man at £50 a year and his rations. I kept no accounts of my earnings; but during the four seasons I spent at Louth I had two trips round to Adelaide and Melbourne. I went down to the Melbourne Cup and I was away three months. I had nothing worth speaking of when I started at Louth, but of course there was plenty of fruit and vegetables to help me along. My fruit-trees were very successful except the apples. I was under very little expense for living while at Louth.

*To Mr. Trickett:* I supplied the shearers and rouseabouts for 30 miles round at 1s. 6d. a week. While I grew crops all the year round, the time when I grew heavily was when shearing was on.

*To Mr. Lee:* I was at Louth during some very hot summers. I was there during last summer, for instance, and I found that vegetables would not do well in the hot weather. Melons and pumpkins do well enough, but other things are affected by the heat.

*To the Chairman:* During the three years I was at Louth I earned nothing except in the way I have told you.

*To Mr. Lee:* I left Louth because the ground I was working was not my own. It belonged to my brother-in-law, and he asked me £125 a year for permission to use 20 acres, which was too much. I should have stopped there if I could have made a better arrangement.

*To Mr. Trickett:* While I was at Louth I was working on the halves system.

*To the Chairman:* In that way I paid my brother-in-law a good deal more than £100. Last year my cheque from Dunlop alone came to £40 odd. I believe that I gave my brother-in-law over £200. Louth was worth £1 a week or nearly so.

*To Mr. Hassall:* When I could come to no satisfactory arrangement with my brother-in-law, I was going to start at Redbank; but then I thought it advisable to come up here. My brother-in-law supplied the engine and pumping plant and the cart and horse.

*To Mr. Lee:* I should not have taken up land at Pera if the water were not supplied; but I think I should do very well here. I think the soil is as good as that at Louth; but I have not grown anything upon it yet, because I have been here only about eight weeks.

*To Mr. Black:* I do not think that the bore water is as good as the river water for irrigation purposes. It has some mineral in it, and is inclined to cake the soil. I see that it has already done so in some places. The soil will want to be continually worked. I do not think that it will cake as much with the river water. In using water from the bore, it will be well to use it moderately, so that it may drain away quickly.

*To Mr. Trickett:* The crops grown here by my neighbours have done very well. The water does not appear to have been injurious to them.

*To Mr. Wright:* I have noticed no deposit upon the surface of the soil where artesian water has been applied. I have used the water for washing purposes, and I find it softer than rain water. I think that

- Mr. F. Hersey.  
22 June, 1896.
- there is soda or something of that kind in it, because cabbages and peas when boiled in it turn green, just as they do when soda is put into the water.
- To Mr. Lee*: I have grown better vegetables at Louth than the Committee saw in the adjoining paddock. I think that the holder of the adjoining land is not working his ground properly. At the same time, I see nothing to discourage me; in fact, it is quite the reverse. My principal market is at Bourke, and when there is a steamer on the river I will send to Wilcannia. If a square mile of country were put under cultivation, more would be produced than would be sufficient to supply the whole district. 5
- To the Chairman*: I intend to plant fruit-trees and vines, and while they are growing I will cover my expenses by producing vegetables. When the fruit-trees come to maturity, I will have the fruit to fall back upon. This year I intend to put in 5 acres of fruit-trees, principally stone fruits, and 2 acres of 10 vines. I grew potatoes at Louth, but I took a good deal of trouble with them. I intended to try them again here.
- To Mr. Lee*: I found that at Louth the potatoes grown upon a piece of black soil were waxy, while those grown on red soil were mealy. I took up my present holding in March last, and I hope to have half an acre of peas ready for market in September. If a man likes to put in growing crops, he need not wait 15 very long for a return. In three weeks or a month I intend to put in a lot of tomatoes, melons, and so on. At Louth I was never a week without money coming in.
- To the Chairman*: I had the full use of the pumping plant at Louth, and I was able to put 2 acres under lucerne.
- To Mr. Lee*: I do not think that the charge made by the Government for the land and water at Pera 20 Bore is excessive. If I could not afford to pay £5 a year for my block, it would not be worth while to try and do anything with it. I could have paid my brother £50 a year for the 20 acres. At Louth I grew 8 acres of wheat without irrigation. Of course if I had had to pay for the pumping, I could not have paid £50 a year for the land at Louth.
- To Mr. Trickett*: I intend to cultivate 16 acres of my present holding, using the remaining 4 acres for a 25 paddock. I intend to put 2 acres under broom millet. I have altogether 20 acres on a perpetual lease. I pay £5 a year rent, but at the end of five years the rent is to be increased to £10. That amount includes the cost of water.
- To Mr. Wright*: I regard the terms as very liberal, especially if it is proved that the ground will stand continual drenching with mineralised water. I have had no experience of the effect of such water, but 30 from what I have heard, I do not think it will have a bad effect upon the soil.
- To Mr. Trickett*: The soil will require some manure. I intend to use bone-dust for the fruit-trees. I will be able to get it moderately cheap from the local meat works.
- To the Chairman*: At Louth I manured the land from the very first. I do not think that vegetables could be grown on this land successfully for more than a year without manure. 35
- To Mr. Hassall*: I think that settlements of this kind are likely to be taken advantage of by the people. The work of irrigation is carried on very simply. No machinery is required, and all you have to do when you want water is to pull up a plug and let it run out of the main flume on to the land. Married carriers might be induced to settle on places of this kind. A great deal of their time which is at present useless to them might be employed in growing crops to provide feed for their horses. 40
- To Mr. Trickett*: I do not think that it would pay to grow cereals on the banks of the Darling, even though irrigation were provided for by the establishment of a pumping plant, of which people could avail themselves, because there is no market for such produce. Very few kinds of produce would carry any distance.
- To Mr. Lee*: Of course I would sooner be situated on the banks of a permanent stream, because that 45 would provide a means of sending produce away cheaply, and the water would also be better. Under similar conditions I would prefer to have a river frontage. I do not know that I can pay £1 an acre for such land, however. I certainly could not pay 5s. an acre for the right to take water from a river.
- To Mr. Wright*: None of the settlers here have got any return yet. Last year they had a very unfavourable season. 50

TUESDAY, 23 JUNE, 1896.

[The Sectional Committee met at the Municipal Chambers, Bourke, at 11.45. a.m.]

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (CHAIRMAN).

The Hon. WILLIAM JOSEPH TRICKETT.  
CHARLES ALFRED LEE, Esq.

THOMAS HENRY HASSALL, Esq.  
GEORGE BLACK, Esq.

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FRANCIS AUGUSTUS WRIGHT, Esq.

The Sectional Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Philip James Biddulph, Esq., Solicitor, Bourke, sworn, and examined:—

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- P. J. Biddulph, Esq.  
23 June, 1896.
- To the Chairman*: I am quite ready to answer any questions that may be put to me by the Committee, but I can only speak in generalities. I have resided in Bourke for upwards of thirteen years.
- To Mr. Trickett*: I believe that a series of properly constructed locks would make the Darling permanently navigable between Bourke and Brewarrina. Since I have been here, the river on two, if not on three occasions, has altogether stopped running at Bourke, and at Fort Bourke station the banks have had to be "brushed" to keep the sheep from straying from one side of the river to the other. Navigation has always been intermittent. In its present state, the river cannot be relied upon for permanent navigation. I do not know what the feeling of the Brewarrina people is in regard to the project into which the Committee are inquiring; but, so far as I am in touch with the people of Bourke, I know that they are in favour of the river being locked. I have learnt from conversation with people here, that they are of opinion that it would be unwise to make a railway from Brewarrina to the Western line, because the locking of the river would make it serve equally well as a feeder to that line, and it is assumed that the locking 70

locking of the river would be cheaper than the construction of a railway, while the annual cost of maintenance would be less. I have not heard the question of the imposition of dues discussed; but I should think it would be only fair to impose such tolls upon the river as would recoup the Government for the expenditure necessary to make it navigable. These tolls would have to be paid by people who sent their goods along the river. I cannot say, however, that the carrying out of the proposed works would, to any extent, increase the value of the Crown lands adjoining the river between here and Brewarrina, because, at the present time, there is always sufficient water for the purposes of stock-raising. No doubt, with a large permanent supply of water in the river, irrigation would be assisted; but I cannot say to what extent people would avail themselves of the opportunity to irrigate. The progress of the district cannot be regarded as having been retarded because of no steps having been taken up to the present time to improve the river; but the improvement of the river would be an advantage to the town. The proposed works, however, affect the Brewarrina people chiefly. The principal benefit to be derived from the scheme is the certainty of transit from the Brewarrina district to Bourke. At the present time a great deal of the trade from that district goes to Byrock. Of course, when the river is up, it comes to Bourke. Very large cargoes of wool come down when the river is up, and if the channel were permanently navigable, no doubt it would be cheaper to send produce by that route always. With regard to the climate of the district, there is only about four and a half months of very hot weather during the year, the hottest months being January and February. In those months agriculture could hardly be engaged in except with the assistance of irrigation, and a great deal of irrigation would be required, especially in a summer like last summer. Occasional crops do very well; but there is always a great risk in undertaking to grow anything. With irrigation, lucerne grows well in the district. To make a certainty of any crop you must irrigate, though without irrigation you would probably get one crop out of three. I believe that any person who wished to irrigate would be willing to pay the suggested charges. Five shillings an acre for the right to pump the water seems to me a small charge, and a fair charge. I do not think, however, that sheep-farmers would be willing to pay from 6d. to 1s. per acre for water to improve their pasturage. They can take as much water as they like now for nothing, and they irrigate to some extent; but I do not think they could afford to pay a charge for the water. The sheep-farmers have as much as they can do to get along at the present time. Land having a frontage to the river carries one sheep to from 2½ to 5 acres; but in some cases more land is required to carry a sheep. I think that irrigation would be used only for the purposes of agriculture, and I should say that the soil near the river banks is suitable for agriculture with irrigation. At the present time the only place at which irrigation is carried on close to Bourke is about 2 miles below the town, near the weir which is being constructed. The land there grows very fair crops, I believe. There is a great deal of country similar to that which the Committee saw at the Pera Bore settlement, close to the river banks, though it only occurs in patches. There are areas of red soil within a few yards of the river. With water I believe you could grow anything here, except the fruits belonging to a cold climate. The market, of course, would be limited, except in times of drought, when there is always a very great demand for produce. Of course there might be a market for dried fruits in the metropolis; but I question if produce could be sent so far at a profit. At the present time, when the river gets very low, the water becomes objectionable. The town of Bourke relies upon the river for its water supply, and for that reason it would be an advantage to have the river locked. Now, when the river gets very low, weeds grow up from the bottom, and the water becomes very offensive, although there has always been a sufficient quantity of it. There has always been 6 or 7 feet of water in the middle of the river, even in the driest times, and therefore we have had sufficient water for household purposes, though it is only water of a kind. I do not think the Government can expect any great increase in the value of pastoral land from the carrying out of these works, although they may be able to sell certain land for irrigation farms. I was here in 1885, 1888, and in 1895. In 1885 the water was not laid on to the town; we only had a water supply given to us in 1887. To Mr. Lee: I know the country north of Bourke as far as Barrington. In good years, when the river is navigable up to Walgett, the whole of the trade of that district, and even as far as Mungundi, drains here. As a rule the river is not navigable all the year round, and between Brewarrina and Walgett it is navigable for shorter periods than between Bourke and Brewarrina. When there is no river the traffic finds its way by team to Byrock, though I do not know where the line of demarcation could be drawn between the traffic coming to Byrock and the traffic going to Narrabri. If there were permanent water, and thereby cheaper rates—and my experience is that water carriage is always cheaper and better than road carriage—the traffic would come to Bourke from as far up as Mungundi. Of course a railway to Walgett would deprive the river of a certain amount of traffic. Besides, Walgett is only 60 or 70 miles from Brewarrina, and traffic from Brewarrina might go that way by road, if the river were not navigable. The river, of course, is very uncertain. I have seen it unnavigable for almost two years, and then it has been navigable for three years at a stretch, with one small break. No doubt a permanent waterway would have the effect of determining the course of traffic to some extent, though I am sceptical about an increased value being given to pastoral holdings in the district by the proposed work. Some of the graziers, at the present time, grow lucerne under irrigation to provide horse-feed, and possibly in the future they may irrigate to provide feed for sheep; but they have not done so yet to any extent. No doubt if it were commercially possible they would have done so; but I think it would be out of the question to irrigate for grass. Nearly the whole of the land on the river is Crown land. In my opinion the settlement at Pera will be more successful than a river settlement will be, and I do not think that in our time there will be much more settlement along the river, because I do not see where the people would have a market for their produce. For that reason, I attach more importance to the locking of the Darling for the purposes of navigation than to allow of irrigation.

To Mr. Black: I think that the settlement at Pera is more likely to succeed than any river settlement, because our experience in the flood of 1890 was, that where the flood-water covered the land it killed all the stone-fruit; and I think that dried fruits would pay best to cultivate in a climate like this. Of course the interference by flood-waters would depend upon the height of the banks upon which the farmers settled. In some places the land on the banks might be frequently covered. We had a very high flood in 1890, the water coming into a great part of the town; and then, a month afterwards, another high flood, which all but entered the town. The success of a river-side settlement would also depend upon the cost of pumping water from the river. The water from an artesian bore rises up above the level of the land, and can be easily distributed over it; but to irrigate with river-water you have to pump to a considerable

P. J.  
Biddulph,  
Esq.  
23 June, 1896.

P. J.  
Biddulph,  
Esq.

23 June, 1896.

considerable height. Of course a settlement upon the river banks would have the advantage of cheap water-carriage; but the Pera settlement is only 7 miles from a railway, which is not very much. You might have to go some miles up the river to get a suitable position for an irrigation farm. Of course it would take pretty well a day for a man to come in from Pera with produce and go back again; but then, on the other hand, the man living alongside the river would not always be sure of having a steamer at hand to send his produce by. With regard to the likelihood of a market being obtained to the north in the direction of Cunnamulla and the Queensland border, supposing there was steady production, I have included that in the local market. In the term "local" I include the whole district. With increased settlement there would be an increased demand, and I think that the locally-grown produce would be able to command the local market. I have made no observations as to the tendency of obstructions in the river to divert the course of the water; but I have heard it said that a very small thing will change the course of the channel, and I know that the soil of the banks is very soluble. When the river is very low the water is clearer than when it is running. At such times, if you let the water stand in any vessel, it becomes somewhat offensive to the taste. I have not noticed that there has been any epidemic at Bourke when the river has been low; but people then always rely on rain-water as much as they can. I do not think that a fixed weir would have a bad effect upon the water, because, although it might prevent the river running at times, there would be such a large body of water conserved as to be always fresh. Now when the river gets very low the salt-springs act upon it, but, with a large body of water, their influence would not be felt.

*To Mr. Hassall:* I think that if the proposed scheme were carried out traffic would be attracted to Bourke from the Birree, Culgon, and all the country in that direction. Of course, if a railway were constructed to Brewarrina, it would intercept a great part of the river traffic. I do not think that people would send wool past Brewarrina to Bourke by river if they could put it on the train at Brewarrina, because in all probability the rate of carriage from the two places would be the same. At the present time there are differential rates imposed with the object of attracting the Queensland traffic to our railways, and of preventing our traffic from going down the river to South Australia and to Melbourne, and if the line were taken to Brewarrina those differential rates would still have to be charged. If a railway were constructed to Brewarrina, it would be foolish to lock the river, because the merely local traffic between Brewarrina and Bourke would be of very little importance. With regard to irrigation, I think that if there were an assured market small areas might be cultivated; but irrigation would not be undertaken to any great extent. I should not think that there would be sufficient irrigation to recoup the Government for the cost of the work. There would practically be only the local market to supply, because the cost of rail and river transit would destroy any chance of competing successfully in the metropolitan market with the producers of districts nearer to the coast. There are a number of bores round which the land is similar to the land round the Pera Bore, and, of course, if the bore-water were used to irrigate that land, the settlers there would immediately strive for the trade of the district, and it would be difficult to successfully compete against them. The stuff grown near the various bores would have a better chance of selling, because it would have less carriage to bear. It is the cost of transit that kills production in the interior. I could not speak as to the advantages of a fixed weir over a movable weir. A great amount of silt is brought down by the river; but I could not say what effect it would have upon the shutters of a movable weir when submerged.

*To the Chairman:* I do not think that settlers on the river bank could pay 25s. an acre for their land and the right to pump water and compete successfully with settlers obtaining land and a supply of water from the artesian bores at 5s. an acre, nor do I think that the carrying out of the proposed works would give any immediate increase in the value of Crown land on each side of the river except, perhaps, just where irrigation colonies were started, although even there you would have to sell the land at a low price in order to encourage irrigation. If it had been worth their while, no doubt many people would have already used the river water to irrigate their land, and the work of irrigation has been undertaken in some cases for small crops, such as patches of lucerne. I do not think that there would be any increase in irrigation if the proposed works were carried out. The only chance of irrigation would be where people could get the water at a very low cost, but even then they would have to be assured of a market. In all cases the want of a market would be an obstacle to successful settlement. Any increase which might be obtained in the value of Crown lands along the river, by making the river permanently navigable, would be very slight; but if there were any, it would probably be taken into consideration by the Land Board. On one occasion I believe it was necessary to use sand-bags in order to protect the town water-supply. I think the pipes got silted up. With regard to the homestead leases in the district, I think that from Beemery to Brewarrina, on the east side of the river, all the people are homestead lessees. In the event of the construction of a railway to Brewarrina, no doubt those people would use that line. At all events, those who are nearer Brewarrina would use it. Settlers equally distant from Bourke and Brewarrina might go to either place.

*To Mr. Wright:* If the Water Conservation Branch estimated that 15,000 acres between here and Brewarrina would be irrigated, supposing the river were locked, I do not think that the estimate will be realised. No doubt the scheme would provide a good supply for the town of Bourke, that is, it would make the water better than it is now, but, generally speaking, it would not greatly improve the supply. It would, however, give permanent and cheap carriage between Bourke and Brewarrina, and it might increase the traffic on the western line, though nearly all the traffic of the district comes to the railway now, either at Bourke or at Byrock. If the traffic on the western line were increased, no doubt traffic would be taken from the branches of the northern line.

William James Holding, Esq., Government Appraiser, Bourke, sworn, and examined:—

W. J.  
Holding,  
Esq.

23 June, 1896.

*To the Chairman:* I am of opinion that the proposed works will conserve a large supply of water in the river channel which will be available for irrigation on both sides of the river. They will guarantee a good supply for the town of Bourke, and will provide permanent water-carriage between Bourke and Brewarrina, and carriage at cheaper rates than now obtained. I have not been to Brewarrina, though I have been to Byrock. I do not know the Darling above Bourke, but I know it below Bourke as far as Wentworth, and I know the whole of the Murray. While I think that the locking of the Darling will, in the distant future, enhance the value of Crown lands on both sides of the river, I do not think it will do so in the near future. At the present time the western railway intercepts most of the traffic from this district,

district, from Wilcannia upwards. The traffic from the country below Wilcannia passes along the lower river. For some considerable time I have devoted a great deal of attention to irrigation, with the result that I have found that, by the use of water and the exercise of ordinary intelligence, some of the best tropical productions in the world can be obtained here, though, unfortunately, notwithstanding the good quality of the productions to which I refer, there is at the present time but a poor market. This is my thirty-third summer on the Darling. When I went to Wentworth I commenced irrigating, in order to grow vegetables. I grew the first cabbage and the first oranges that were produced on the lower river, and I have gone on step by step, until now I have sufficient land under cultivation to make it necessary to use a steam-engine and windmills for the work of irrigation. I undertook this work first, as I have already said, in order to grow vegetables, because vegetables could not then be bought in the district. In a few years, however, I had more fruit than I required, and I sold the surplus to advantage. At the present time I have about 12 acres under irrigation, and, although I have kept no account of my expenditure and the returns obtained, I know that some time back I was carrying on the work at a profit. I have not the data with me which would enable me to say how much I obtained from each acre under irrigation; but I know that until late years the growing of fruit paid very well. Latterly the market has fallen off, and the product is of very little value. This is to be attributed, in the first place, to the want of population—people left Wentworth. Then Mildura came along; but, before that, we had South Australia as a competitor. Fruit has been sent from South Australia as far as Bourke in the olden times. We could not compete with South Australia, because they produce their fruit under natural conditions, while those who cultivated at Wentworth had to pay the cost of the machinery and labour necessary for irrigation. In the early years I made a very good profit on my work, and the fruit we produced was superior to what came from South Australia. With regard to the proposal before the Committee, to lock the river to provide for irrigation, I think that if population can be induced to come here the scheme is a good one, and should recommend itself commercially; but I am afraid that the necessary material could not be got together to work the land to advantage. By that I mean that good, industrious men and men who have a certain amount of knowledge could not be obtained to do the work. My idea is that, in the immediate future, the benefit of locking the river will be derived from giving better navigation and rendering traffic on the river certain. A waterway can always compete successfully with a railway. My home is at Wentworth; but my occupation has taken me all over the Lachlan district, the Darling district, and the Warrego district.

*To Mr. Lee:* I am thoroughly acquainted with the character of the soil from Wentworth to Bourke, and up to about Kenilworth, and I know the country back from the river, on the western side, though not on the eastern side. I look upon the soil immediately on the banks of the river as fit to grow anything with irrigation. I do not entertain the idea that even some presumably competent persons entertain, that the soil here is too stiff to cultivate. At any rate, if other conditions were favourable, there would be no doubt as to its suitability. I have been an appraiser since 1867. No doubt, if the river were made permanently navigable, parts of the country now sending produce by other routes to a market would send it to Bourke, because there would be the certainty that once they got to the river banks they would have immediate despatch to market. If there were navigable water, the producers could take advantage of the river at any time under ordinary conditions, tapping it at its nearest point. As far as the country itself is concerned, teams can travel through it nearly anywhere, except that occasionally there is very heavy sand to be met with. On the Murray they ship wool or any produce they have, wherever it is most convenient to take it to the river-banks, and the same thing would be done here. Then, too, if the river were rendered permanently navigable, the traffic which now comes to Bourke only occasionally would come always. I do not attach much importance to the scheme from a settlement point of view. At present there is very little settlement on the banks of the river—comparatively none—and I presume there would be no inducement for the people to settle; one reason why the people would not settle here being that the river in its natural state is very uncertain. At times there is a fair amount of water, occasionally there are floods, and, at very long intervals, there is scarcely any water at all. That would make irrigation under natural conditions very difficult. I think that small settlements would follow if the Government offered suitable land on the banks of the Darling under similar conditions to those given at Pera. There would be no settlement at Pera if there were no water there, and probably none if the Government had not given the people special facilities. People could not pay 25s. an acre for land on the river bank and then pump the water themselves. Under suitable conditions, however, I think settlers on the river banks would have as good a prospect of success as the settlers near the artesian bore at Pera. I think that if suitable conditions were offered, small settlers on the banks of the river could make a comfortable living, but there would have to be some limit to their number, because of the want of a market. Otherwise I fear there would soon be over-production, because the expense of railway carriage would, I think, prevent them from competing in outside markets. Of course, if there was much production in this district, people would obtain locally a great deal of what they now import from elsewhere, but, at the same time, the local market would not be a large one. At Wentworth I have gone in for dried fruits—raisins, currants, apricots, peaches, nectarines, apples, and pears—but I have not been able to find a profitable market of late years, because there has been no demand. Mildura, too, is a competitor now, but even before Mildura came into the field our market had fallen off. I am still struggling on, but the return has not been sufficient to pay for the labour required. With regard to the prospects of settlers in this district, I think that fruit-growing should occupy very little attention. There are many other products which would pay a small settler a long way better than fruit. In this climate two crops of potatoes can be obtained in a year, onions would be a most profitable bulb, and other root crops might be grown for making bacon. To my certain knowledge hundreds of tons of bacon come from Warrnambool and South Australia to places on the Darling; but that bacon might be produced locally. I think that the locking of the river is the proper way to proceed, if you wish to induce settlement, and as long as the money is discreetly used I think the undertaking will be a wise one. Although small settlement may not take place to any great extent at first, it will gradually increase in course of time.

*To Mr. Wright:* I am aware that all the wool which is grown in the district lying between Bourke and the Queensland border, north and north-west, comes into the river now, either at Brewarrina or at Bourke. I am not aware that there is an export duty of £2 a ton upon wool going from Queensland into New South Wales; but such a duty would practically prevent the exportation of any large quantity of wool from Queensland. If the proposed work were carried out, I think that we might get a little increased traffic from

W. J.  
Holding,  
Esq.

23 June, 1866.

W. J.  
Holding,  
Esq.  
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from the country further west, though probably that wool would come into Bourke direct. I am inclined to think that the carrying out of the proposed work, would offer an inducement to settlement, and that the district is so far away from other producing centres that the local market is not likely to be much affected by outside competition. At Wentworth I had to face, not only outside competition, but a decrease of population. The pressure of the times has caused a large number of persons who formerly were consumers to remove from the district. While we had consumers we could compete with people from outside, because the quality of our productions was far superior to that of the imported article. The only conclusion to arrive at in regard to the condition of things at Wentworth, is, that the demand is not equal to the production, and the market is overstocked. I account for the competition of South Australia on the principle that anything cheap sells more quickly than a better and dearer article. Here, the attempt at closer settlement must go on quietly and steadily, by small degrees. If the Departmental officers estimate that 15,000 acres will be put under crop between Bourke and Brewarrina, I can only say that it will take very many years before so large an area of country is dealt with in that way. I do not think that Crown lessees are likely to cultivate lucerne in areas of 400 or 500 acres, because it would cost too much money. In addition to the cost of water, there would be the cost of labour and other expenditure. My experience in growing hay on the river is, that it does very well when the season is good enough to give you any crop, which is about three years out of every five. On the lower river we get either a very good crop, or none at all. I do not know what they do here, but lower down the river immense stacks of hay are kept for use in a bad season. Even with cheap water I do not think the squatters are likely to grow lucerne for the feeding of sheep. That was tried on the lower river for stud-sheep, but it ran into too much money. In some isolated cases it might pay, but it would depend altogether upon the locality. If you got a suitable piece of land the expenditure might be justifiable; I do not think however that irrigation will be generally followed for this purpose. I know the Pera Bore Settlement, and I think that the kind of settlement that you have there is likely to extend,—the local consumption ought to be large enough to require a dozen such settlements, and people getting their land and water cheaply ought to be able to compete with outside sources of supplies. In my opinion the most important reason for carrying out the scheme is to provide for navigation.

*To Mr. Black:* At Wentworth I hold purchased suburban land. I have gone to the expense of erecting windmills and a steam-engine; there are only 12 acres in my block, though I would have taken more land if I could have got it. My steam-engine cost about £230, while the windmills cost about £50 each. The holding however is not sufficiently large to keep that plant permanently employed. Even if I had a larger area of country I would not extend my operations now, in view of the present depressed state of the times. Of course it would be possible by fluming to carry the water a long way from where I raise it. At the same time the conditions here are much more favourable than the conditions on the lower part of the river. If a large area were rushed into the market here, and an attempt was made to force irrigation, I do not think that the result would be successful; but if efforts are made to carry the thing on in a quiet, steady, and practical manner, they will ultimately prove successful. Earlier in the examination I said that the fruit produced at Wentworth was superior to that imported from South Australia, and I wish to be understood that it is still superior. The fruit imported from South Australia has not improved in quality; it is no better now than it was thirty years ago. The cause of my failure at Wentworth was not due either to the improvement of the South Australian products, or to the deterioration of my own. The productions of the Lower Darling rival those of the great and boasted Mildura, and our exhibits have taken many first prizes away from the Mildura people. No doubt the comparative absence of small settlers from this district is largely due to the fact that land has not been available, while people who would be prepared to irrigate small areas have not had the necessary funds to pay for the erection of a pumping plant. If the Government would go to the expense of erecting pumping plants, there might be some increase of settlement in the district; but it would depend entirely upon the price charged for the water. Then, too, as I have said, there is not the class of men available. I have found that at Mildura very many failures have resulted from the want of necessary knowledge on the part of those commencing as agriculturists. Lots of men who started there with capital have since become beggars, because of their want of the necessary knowledge. That having been the case at Mildura, it would probably be the same here. At the same time, an industrious man with intelligence, and a certain, though perhaps only a limited, knowledge of agriculture, ought to be able to make a fine living for himself and his family on 20, 30, or 40 acres of ground here. Men can only become trained agriculturists by experience. If in a community of orchardists there is a number of men who know how to work, they will teach others who are studious and industrious. I would recommend delay in a large scheme of this kind upon the principle that

Vessels large may venture more,  
But little boats must keep near shore.

An intelligent man having a good neighbour will soon gain sufficient knowledge to enable him to work his holding properly and satisfactorily, and thus in time you would have a superior class of men able to do the work required of them.

*To Mr. Hassall:* If the scheme were carried out as proposed, there would be a strong agitation to have the river locked further down. I think that the Government would do wrong to confine the improvement of the river to one place. This should be a national undertaking, and in the end it would be very successful. Of course, if the river were locked all the way down, traffic would go to Victoria and South Australia. There will soon be a railway from Swan Hill to a point very near Wentworth. The Victorians are making superhuman efforts to bring that about, so as to tap the trade of the Darling. I suppose that there is too much of that sort of thing going on to suit the trade of New South Wales. Nearly every vessel passing Wentworth belongs to Victoria or to South Australia. We have some hawking boats; but the general cargo boats are owned in South Australia or Victoria. They take wool away when the river is navigable; but I do not think any wool goes down the river from above Wilcannia. Wool coming down the river from Brewarrina would be unloaded at Bourke, and sent on by train; but wool coming to the river anywhere below Wilcannia would be sent on to the other colonies. The Broken Hill railway commands a large area of the Wilcannia country. There is an immense number of teams on the road to and from Broken Hill, and from various parts of the Wilcannia district. Wilcannia just now is entirely dependent for her supplies upon Broken Hill, and those supplies come first from South Australia. If the river was navigable, those supplies would come by boat, and Wilcannia would be a distributing centre.

Water

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Water carriage can always compete with land carriage. A boat will take 500 tons of goods from Morgan or Murray Bridge to Wilcannia at a merely nominal price because, as a rule, back loading is to be obtained. I think that the Government are commencing at the right end in starting this work; but the river should certainly be improved right down. I do not think it would be necessary to lock the river 5 above Brewarrina; but that is a point upon which I am not competent to give an opinion. With regard to the soil of the district, I should say that the river bends are the best for cultivation, and the ground on the higher banks for residences. Stone-fruits are entirely destroyed by flood-water. I have known an orange-tree to be three months in the water and not suffer; but stone-fruit is killed by flood-water, unless that water runs off very rapidly. The best stone-fruit up here, that is, the apricot, is most easily 10 killed. The climate is specially suited for apricots. The land in the river bends is, in many cases, low-lying; but the soil will stand any amount of cultivation without recuperation. There is the risk of losing a crop by a flood; but floods do not come often. The mere submergence of the land at times will not do any very material injury. A man might occasionally find it to his interest to make a dam to stop the current, although he would not attempt to keep the water off the land. I have known the river 15 to cease running during the time I have been in the district. In my early days, a steamer, for nearly three years was laid up near Bourke, with a whole cargo of wool on board. On the other hand, I have known the Darling to be open to navigation for seven consecutive years. I think that a movable weir should be constructed in the Darling. The great dam they have on the Goulburn is a sort of shutter dam. It can be used as a dam, or it can be elevated. The drawback to a fixed weir would be the silting. On 20 the Darling you ought to construct a dam which you can lift up or shut down. You must be able to create a scour to prevent any silting up. I do not think that a movable weir, when not in use, would run any risk of being silted up, because I think there would always be sufficient water at command to wash away any silt. When the steamers are stranded in the river they manage to get rid of the silt by creating a scour with sand bags: and you could create a scour in the river, where you have a 25 movable weir, simply by elevating one or two of the shutters. The drawback to a fixed weir would be that the silt behind it would choke up the channel. The depth of the river channel would be reduced for miles back if the silt could not get away. I saw that exemplified in connection with an ana-branch some time ago. The river would eventually become so shallow as to interfere with navigation. A weir, such as the weir in the Goulburn, in Victoria, prevents this silting up. A good deal of the Goulburn runs 30 through hilly country; but the lower Goulburn is in flat country. I have seen the Darling running 5 miles an hour on the lower river, when the Murray has been down.

*To Mr. Trickett:* I am not aware that the proposed scheme is estimated to cost £121,000; but, if that is so, it is too much. I do not see any possibility of any reasonable return for so large an expenditure. The chief source of revenue would be the local revenue, and for some time to come there would be no 35 sufficient local market. It will depend upon the nature of the produce grown as to whether an outside market will be sought for. I am afraid that the products grown by irrigation in this district would not be able to compete with outside sources of supply. Of course the producers in the district will use the river as much as they can, if only to avoid extra handling; but water carriage is always cheaper than rail carriage. In this district there would be water carriage for only part of the way, and rail carriage for the 40 rest of the way; but to Wentworth only water carriage, and the goods had therefore only one handling. This scheme is justifiable as an attempt to establish population in the district; but it will not be remunerative for a long time to come.

Daniel William Field Hattan, Esq., Inspector of Stock, Bourke, sworn, and examined:—

*To Mr. Wright:* I have lived in the district for forty years: that is, the district extending from the mouth 45 of the Darling up to Bourke; and for some years I had Yanda Station, near Bourke. With regard to the proposal before the Committee, I think that it will benefit the residents of the district by providing cheap water-carriage, but I am not competent to say whether it will advance irrigation. Nearly all the country between Bourke and Brewarrina is liable to flood. Two branches of the Bogan come in on the one side of the river, while the Culgoa comes in on the other side. Of course there are often long periods 50 when we have no floods. No doubt this scheme will encourage population by providing cheap carriage; but I think that if people went in for irrigation they would have difficulty in getting a market for what they produce. I do not think the Government would be justified in doubling the rents of the Crown land along the river if the scheme were carried out. The stock raisers along the river would reap no great advantage from the scheme, except, perhaps, cheap means of transit, and I do not think they would 55 be likely to go in for irrigation to raise fodder for their stock, or, at least, not to any large extent. We have proved beyond all doubt that the land will grow anything; but up to the present time there has not been much irrigation tried. If people could grow fodder by means of irrigation, they would be able to fatten more stock, and the improvement of the river would enable them to get them away to market. I think that it would pay a man within 25 miles of Bourke to put from 300 to 500 acres under lucerne, in order 60 to "top up" his stock before sending them to market, and there are many hundreds of acres which could easily be irrigated because the land is so flat. I am inclined to think that it would pay the lessees to take the water at the Government charge—5s per acre per annum for agricultural land, and 6d. or 1s. per acre for grass land. If one man went in for irrigation and was successful, others would soon follow, and in this way small settlement would be encouraged. I think that if the Government threw open small 65 blocks of land on the river bank under the same conditions that they are selling land at Pera, it would encourage settlement. Of course there is no local market; there would be only the metropolitan market. We irrigated a little of the station and we found that we were able to grow lucerne, and wheat, and all kinds of fruit—apples, oranges, peaches, and nectarines. Notwithstanding our distance from the seaboard I think that with irrigation we could supply our local wants and send produce to the coast. No doubt 70 irrigation would facilitate the "topping up" of stock, and the combination of cultivation with grazing ought to be readily followed. At the present time we get our butter from Sydney. None of our dairies go in for butter making. Last summer we had to import our milk. We got it from the Fresh Food and Ice Company. You could keep no cows here then, unless you supplied them with artificial food. I think that the revenue derived by the State would be sufficient to pay interest on the cost of the scheme. 75 *To Mr. Black:* With a constant supply of water, the dairying industry here would become stable, and with it would gradually grow the bacon and ham industry. At the present time there is hardly a station between here and Wilcannia which has not a little irrigation farm for the purpose of providing hay for use

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use in bad seasons, and, no doubt, if pastoralists could get water from the river at a low rate, these cultivation areas would be increased. At the present time when the river is low it is very costly to pump water from it, because of the high banks. I am not competent to say whether 5s. an acre would be overmuch to pay for the water; but I should not think so. I think it would pay to irrigate land at a moderate charge, in order to grow chaff. Chaff is sent here now from Orange and Bathurst, and even 5 from New Zealand and Tasmania; but, with irrigation, much better chaff could be grown locally. A great deal of the chaff that we import is of bad quality. I am not able to offer an opinion as to the relative merits of fixed and movable weirs. I have noticed that after a flood the river channel changes sometimes. Large rents are cut out across the bends; but these diversions are not permanent, and they do not interfere with navigation. They do not become permanent, because the obstruction which causes 10 them, is generally removed. If the obstruction was a fixed one, the diversion would be permanent. If you make a fixed dam in a watercourse, the river is bound to find another channel in times of flood. You have plenty of instances of that kind on the Warrego. In flood-time ana-branches are often cut deeper than the original channel. The majority of the pastoral lessees in this district are favourable to the scheme. 15  
*To Mr. Hassall:* As to the settlement which might be attracted to the district by the carrying out of the proposed scheme, it would have to exist upon the grazing and the dairy industry. I do not think that people could make anything by growing fruit. I think irrigation would be followed in order to fatten stock for market; but the cost of raising the water has prevented much irrigation hitherto. The higher you have to raise the water, the more expensive it is. I think that by lessening the lift 10 feet, you would induce people to go in for irrigation more. I think that people growing produce here would be 20 able to send it to Sydney, where it ought to be able to compete successfully with the produce from other districts. They could make butter here; but only in the winter months. I do not think it would be found profitable to grow hay, except to feed carriers' cattle in times of drought. Hitherto people have not been educated up to the advantages of irrigation; but I think that the improvement of the river would be a factor in their education. Still, I have only a limited knowledge of irrigation myself. 25 I cannot say whether people within 5 miles of the river would be content to have the betterment principle applied to their holdings, supposing this work was carried out. The difficulty that will be found in settling this district is that the country is low and liable to flood. There are other parts of the Colony better adapted for closer settlement. All the country between Bourke and Brewarrina is liable to flood, and in some places the land is covered with water for a considerable distance back from the river. Both the 30 Bogan and the Culgoa have very low banks, and in some places the flood-waters go back 10 or 15 miles. There are a few high spots in which the soil is a red sandy loam.

*To Mr. Trickett:* Any advantage which the State would get from the carrying out of the scheme would be because of the extra number of stock which would be fattened, and the increased traffic that would come to the railway. I think that the Crown tenants should pay a slightly increased rental if the work 35 was carried out; but they could not pay a very high rental. Land purchased from the Crown ought to command a better price, because the carrying out of the proposed works would make it more valuable. If they had to pay a license fee for using the water I do not think the Crown tenants could pay an increased rental. It is very doubtful if sheep-farmers would pay 6d. and 1s. an acre for water to improve their paddocks. I should not like to pay that amount if I was still engaged in pastoral pursuits. I do 40 not think it would be possible for a man to irrigate a large sheep run from the river. The chief source of revenue must come from the water supplied for irrigating small holdings, though I could not say how many small holdings there would be in the district within two years after the completion of the proposed works. I daresay 100,000 acres would be taken up, providing that land was thrown open for small settle- 45 ment within the reach of water. Five shillings per acre for a pumping license seems a great deal to pay for water when you add the actual cost of pumping. I think that, if we had irrigation, dairying would be done in the district, because feed could be grown for the cows. For six months in the year we could carry on dairying for local consumption. I agree with Mr. Holding that the benefits to be derived from this scheme would be chiefly of a local character.

*To Mr. Lee:* I think that the pastoral tenants would be prepared to pay a higher rent for their land if 50 the scheme were carried out, because they would then be able to grow sufficient feed to allow them to "top up" their fat stock in a much shorter space of time than it can be done with the aid of natural grass. At the present time they would not go to the expense of doing this on any large scale, although each station has a small irrigation plant. The improvement of the river would keep streams such as the Bogan and the Culgoa always full of water, and would enable small settlers to take up the land out there. If the 55 Government established pumping-stations at various places on the river, I think that people would be much more inclined to go in for irrigation. I think that would be an inducement not only to the small man, but to the large holder, and would lead to a larger area of land being irrigated. The filling up of rivers such as the Bogan and the Culgoa, and of numbers of small depressions, would be of advantage to the run-holders. The area affected by the proposed works is comprised in ordinary pastoral holdings. 60 Practically, the whole country is Crown land. Hitherto the homestead leases have not been a success in the district, and they have not led to an increase in the number of stock. Some of the homestead leases are in the hands of the original lessees; but most of them are in the hands of financial institutions. I do not think it is likely that this country will be largely settled until the available land in the Eastern and Central Divisions is taken up, though the day must come when it will all be settled. The capabilities of this district are very large, if we can only get water, though I doubt whether there is at present a sufficient market to induce people to come here. In my opinion, the settlement of the Darling country is only to be brought about by the conservation of water. Therefore, the scheme is a step in the right 65 direction, though there is no prospect of an immediate return to the Government. Comparing irrigation with artesian water with irrigation from the river, it must be remembered that the water taken from the artesian bores enables you to irrigate places a long way back from the river, while you cannot send the river-water any great distance back, except at a very large cost. At the same time, irrigation from artesian supplies is not antagonistic to river irrigation. River water is much more suitable for irrigation than artesian water. I think that all the water that can be conserved, whether by putting down 70 artesian bores or by locking the river, should be conserved. If the river were made navigable from Brewarrina to Bourke, we should get a great deal of the trade that now goes to Narrabri. I do not think much wool would go down the river past Bourke. Any wool coming to Bourke would go on to Sydney by rail. The railway to Bourke has diverted traffic which formerly went to the other other

other Colonies; but in good seasons the river competes with the railway. I think, however, that the locking of the Darling would diminish that competition. There is not so much wool going down to Adelaide now as went there in former years, when there was no railway. People will not run the risk of sending wool down the river; the insurance is too high, and the accidents are too numerous.

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5 *To the Chairman*: I think that a good deal of the traffic that now goes to Narrabri from the Birree and the Bokhara would come to Bourke if people could make use of the river.

*To Mr. Wright*: A good deal of the wool from the Birree and the Bokhara comes to Bourke now. A number of the pastoral lessees between Bourke and Wilcannia have erected pumping-plants at their own cost. I cannot say what the average cost of a pumping-plant is: but we worked with an eight horse-power engine and a Tangye pump. They use centrifugal pumps. I should think that the complete plant for irrigation on a small scale would cost from £600 to £900. The maintenance is not very much. They generally keep an engineer, but he does other work also. The engine is used to drive the pump, and also, in most cases, to drive the shearing machinery. I should think a fair charge for the labour required would be £150 per annum. It would be out of the question for a small settler to provide his own pumping-plant.

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15 The only way would be for the Government to supply the water. I do not think that the river-water will be used any more than it is at present, if people have to provide their own pumping-plant. We have proved beyond all doubt that river-water is much better for irrigation than well-water, though if artesian water could be obtained within 3 miles of the river for one-fourth or one-fifth the cost of river-water, it would be much better. Comparing the position of settlers at Pera with that of settlers under similar conditions on the banks of the river, the Pera people have the great advantage that their land is not liable to inundation; whereas people on the banks of the river would generally be liable to be flooded. As a rule, the red-soil country is not flooded, while it is quite equal in quality to the soil on the river-banks.

*To Mr. Black*: We could grow chaff in this district to feed horses, and I am sure that it would pay. We should be able to find a market for chaff, which would consume as much as is now imported.

Jocelyn Henry Thomas, Esq., Manager, Winbar Station, sworn, and examined:—

*To the Chairman*: Winbar Station is about 90 miles below Bourke, and about 15 miles below Louth. Irrigation was commenced there by the manager who preceded me; but I have a fair idea of what the work costs. We commenced to irrigate, because in the severe drought of 1883 and 1884 we found that

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30 we were paying £18 a ton for the carriage of horse-feed from Nyngan. During that drought it cost us about £2,200 for horse-feed, and we thought we could grow it more cheaply than that. The result has been that we have grown it more cheaply than we could import it. We have now about 8 acres under cultivation. The pumping-plant is placed near the river, at a point where the banks are now about 45 feet above the water-level. The cost of the plant, including the pump, belting, pipes, and engine, would be about £600. There is an open drain running down the middle of the cultivation area, and we have gates to divert the water as we want to use it. The annual cost of the work is about £46 Os. 8d. a year, and our principal crop is lucerne. We have about 6 acres under lucerne, and the rest of the ground is under wheat. We value our fodder at what we would have to pay for it in times of drought, and we store it until we want to use it. By irrigating every four weeks, and attending to the land properly, we get

40 about 6 tons of lucerne per acre. We get about 36 tons of lucerne from the 6 acres, and about 4 tons of wheat from the 2 acres. The following is my estimate of what it cost us to do this work:—

	£	s.	d.
Engineer, eighteen days, at £2 per week .....	5	6	8
One man looking after irrigation, eighteen days, at 30s. per week.....	4	0	0
45 Three men harvesting crop, eighteen days each, at 30s. per week .....	12	0	0
Twenty-five cords of wood, at 6s. 6d. per cord .....	8	2	6
Two gallons oil, at 5s. 6d. per gallon .....	0	11	0
Original cost clearing, fencing, ploughing, levelling, and making drains, at £10 per acre, £80; interest .....	4	0	6
50 Original cost of pump, piping, and belting, £200, at 6 per cent. per annum.....	12	0	0
	£46	0	8

I do not allow anything for wear and tear of engine, as it is used and was bought for working scouring-machine. Forty tons can be produced by irrigating six times during the year. The size of pump used is a 10-inch centrifugal, driven by

55 12 h.-p. engine.

Instead of having to pay £6 or £7 per ton for hay, we grow our own supplies, and thus effect a great saving. The price of wheaten hay in Bourke during the drought was £5 17s. 6d., and then there is £3 a ton for carriage. If the river were running, the carriage would only be 25s. a ton; but it is very seldom that the river is running when we have a drought. I reckon that I saved £500 last drought. I was able to

60 feed twenty-five horses for fifteen months off on the produce of the 8 acres which we irrigate.

[The Sectional Committee, at 4.15 p.m., adjourned until 8.15 p.m., when they met at the "Royal Hotel," Bourke.]

Edward MacFarlane, Esq., District Surveyor, and Acting Chairman of Land Board, Bourke, sworn, and examined:—

65 *To Mr. Black*: I first arrived at Walgett, on the Namoi River, on the 26th March, 1879, and travelled about 120 miles down the Barwon. I arrived in Bourke after the flood of 1879, and I first went to Louth in 1880. 1881 was the first year that I went to Brewarrina, and in 1887 I travelled down the river from Bourke to Wilcannia. In 1889 I followed the river up to Wilcannia from Menindie; in 1893 I followed the river road up and down from Brewarrina to Walgett; and in 1894 I followed the river down

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70 from Menindie to Cuthero. I have travelled not once, but several times over the whole of this district. In assessing the value of Crown lands we always take into consideration all the contributory circumstances of the case. If by the damming back of the river the billabongs were kept full, we should take that circumstance into consideration to exactly the extent that the country was or was not benefited by it. With regard to the floods in the river, I first saw Bourke just after the flood of 1879 had passed off. I was

75 in Bourke during the whole period of the 1890 flood; and at different parts of the river I came in contact with the flood of 1893, which was within 2 or 3 feet of the flood of 1890. I have known three floods

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which I considered to be large floods during the last seventeen years, and during the same time I have known two periods of extreme drought—1884 and 1888. In 1884 the river was practically a chain of waterholes; and in 1888 it was almost a chain of waterholes. In the first of these years Bourke was a smaller town than it is now, and relied mostly for its water supply upon wells, but in 1888 the water supply was very bad. I was a member of the Municipal Council at the time, and, with other aldermen, took precautions for protecting the supply by constructing a sand-bag dam at the site of the present weir in order to throw 2 or 3 feet more into the town supply. The water at that time was slightly brackish and unpleasant. There was no absolute stagnation, because even when the water was not flowing over the surface there was underground percolation. The extent to which the quality of the river water has affected the health of the town has never been known to me professionally. There has been a little typhoid, and a little diphtheria, but there has never been an outbreak of disease at Bourke such as occurred at Dubbo. I think that the locking of the Darling will be beneficial to the district both as a means to cheap water-carriage, and as a means to irrigation. I have no hesitation in saying that I favour it, providing that the cost is proportionate to the result to be gained. If I were told that the cost of locking the Darling between Bourke and Brewarrina was about equal to the cost of a railway from Byrock to Brewarrina, I would favour the locking of the Darling. By the construction of a railway only one object is gained, while by the locking of the river two objects are gained. The locking of the river would improve the Bourke water supply; it would give the means for cheaper transit; and would lead to the establishment in the future of irrigation settlements. I think that if the water was available small settlers would come to the district; but they would come slowly. The success of three or four men would do more to bring population than anything else. I think that for the success of the scheme it would be well that settlement should grow slowly. In my opinion, it would pay every station in the district to cultivate a certain area of country, because I hear it stated in evidence constantly that horse-feed is an item in the annual expenditure. We hear that it costs the stations from £300 to £600 a year for horse-feed as a regular thing, and they could grow that feed for about one-third of the price. When they find that they can grow feed cheaply, they will grow it, not only for their horses and for the cows which every station should keep, but for their stud-sheep and, ultimately, all the best stock. At the present time some of the stations have to employ men to cut down the mulga and supplejack and other edible scrub for the stock. Considerable sums are spent in this way, amounting to hundreds of pounds; but the results are not satisfactory. The food thus supplied is not altogether suitable to the requirements of the animals, and the sheep sometimes die. In any case there is not the growth of fleece that there should be. Large sums of money would be saved if the run-holders grew hay and stored it against periods of drought. I think it would pay them to do this. If a man has wool of a class that is known and sought after in the home markets, it is well not to let it deteriorate in any particular, and thus the feeding of the sheep would pay indirectly, by keeping up the quality of the wool. The bulk of the fruit consumed in the district is imported, and the bulk of the vegetables; therefore, there should be employment here for a certain number of market gardeners and orchardists. At Gongolgon there is an excellent Chinese garden which is irrigated, and a similar place at Angledool. There are also gardens in other parts of the district. The Gongolgon garden supplies the district lying within 30 miles of it, I suppose, though the population nowhere is very large. In the 60,000,000 acres comprised in my district there are not more than 40,000 people. There is a large market for chaff throughout the district at all times in the year, and for two reasons. The country is now heavily stocked with sheep, so that there is very little grass to spare, and the rabbits also tend to drive horses on to chaff. The working horses throughout the district must now be fed with chaff. At present we are having a very good season, and a good many horses are turned out; but, as a general thing, the horses in this district require to be fed. In bad seasons people have to do with fewer horses. With regard to dairying, I may say that last summer we were supplied with milk twice a day; but I do not know of any locally-made butter except goats' butter, which is only made in small quantities. I think that in the very hot weather we should always have to get our butter from places where the climate is cooler. I do not think it would be generally possible for us to compete in the metropolitan markets with our surplus products. We are not very much earlier than Sydney. The climate seems to be particularly suitable for table grapes; but I have seen no wine grapes tried. Good orange crops have been grown, and lemons grow very well. I have not seen any shaddocks; but passion-fruit grows excellently. I know the character of the soil along the banks of the river. It is a grey cretaceous clay, and I think rather too clayey for a ploughing soil. I know no patch of red-soil country between Bourke and Brewarrina on the eastern side of the river; but the patch at the Pera Bore Settlement extends almost to the river at North Bourke. In this connection I should like to read part of a report which I sent to the Minister on the 18th September, 1893, in regard to a piece of country near the Darling River and the village of North Bourke:—

Of the part between the Barrington and Eangonia Road and the Darling River, about 30 acres in extent, two-thirds is a high-level area of red, deep, alluvial soil, once timbered with gidgea. This part above flood-level affords an excellent site for a pumping station, school, and any general buildings of a settlement. The remaining third, the actual frontage, is a grey cretaceous clay soil liable to inundation, and so situated that a cutting for the natural flow of water from the river to within a short distance of a pumping station on the red soil could be easily and cheaply made.

All the land to the west of the road, about 3,000 acres in extent, is high, the greater part a very rich red, deep alluvial soil, densely timbered with gidgea, broken with very small plains; the remainder is thick mulga country on a red alluvial soil, apparently not so rich. Among the mulga is scrub of various kinds. The whole area produces salsolaceous herbage, where the timber is not too thick to permit any grass or herbage to grow. There is also box ludda and belah timber, but not to any extent.

The gidgea, a strong hard timber of the *Acacia* family, indicates excellent soil. It is very useful for fencing, for posts for rough sheds, for rails, for blocks for wooden houses, also for firewood, and to some extent for fancy turners' work; it usually grows so thickly in favourable country that pasture plants do not appear in any quantity amongst the trees, so that country heavily timbered with gidgea is not useful for pasturage, till the timber has been destroyed, when very valuable grasses thrive in good seasons. At least 1,500 acres of the area under consideration are useless for grazing purposes, on account of the density of the gidgea thereon, so that the clearing of this land for agriculture, and the use of the timber thereon would be a public benefit. Good hay crops have already been secured in the neighbourhood of cleared gidgea country without irrigation.

The mulga timber on this area is not of the best kind, and it is on a soil more sandy and not quite so good as that on which the gidgea grows. To some extent it could be used for fencing or firewood. If the scrub and undergrowth were removed this would be excellent pastoral country. When entirely cleared it would be also suited for agriculture.

The whole of the area is above any ordinary flood. I believe it was above the 1890 flood. I feel sure that the greater part of it was not flooded then; also, that any part flooded, if any, was only so for a very short time, and to a very shallow depth—not more than a few inches—so practically liability to inundation is not a factor in the case.

The whole area has been rabbit infested; even now there are many rabbits on it. This closely timbered red country is an excellent home for rabbits.

The

The country is suited for settlement in small areas, with an artificial water supply, and is susceptible of very great improvement. Its withdrawal from the reserves will not in any way prejudicially affect them. In its present state the whole area would not carry profitably one sheep to 10 acres for a year in ordinary seasons; but by killing off timber, fencing, and water supply, it could be improved to carry a sheep to 3 acres, without irrigation or cultivation. By agriculture, without irrigation, it could be made to return one good crop in two years on the average.

The site is suited for settlement, as the place is healthily situated, though very hot in summer; as the soil is good; as permanent water is within reasonable distance; as the furthest point is not farther than 8 miles from a railway station; and as there is also a good local market for fodder crops; and as the ordinary conditions of occupation cannot be applied to it in such a way as to produce settlement, or the much needed improvement of the area.

E.  
MacFarlane,  
Esq.  
23 June, 1896.

10 If you grew lucerne under irrigation I should think you would get about six crops in a year; but I could not say how much you would get to the acre. I should say that you could keep from four to six sheep on the hay from an acre of lucerne. I have been writing a report upon some land which I think, under irrigation, would keep at least four sheep to the acre. There are times in the very hot weather when you would get nothing at all from a lucerne patch; all you could do would be to keep the lucerne growing.

15 Lucerne, in this district, wants rain, as well as water artificially supplied. The pumpkin grows in dry weather; pumpkins, pie-melons, and water-melons, in a good season, will grow to very great perfection here without irrigation. If a man wished to grow pumpkins to feed the sheep, he would have to irrigate, because he could not count upon getting rain. The uncertainty of the rainfall in this district is even a greater drawback than its limited quantity. For that reason, a permanent supply of water which can be

20 used for irrigation is most valuable.

*To Mr. Hassall:* This is almost entirely a pastoral district, the principal stock being sheep, and all schemes for the improvement of the district would appear to have for their object the making of the pastoral industry more secure, and enabling it to be carried on more cheaply. Any agriculture done here must be under a system of irrigation, and to assist the great pastoral industry. If the proposed scheme

25 is carried out settlement will be only slow; but in the course of years, as the district becomes more thickly populated, small settlement, such as is contemplated by the Government proposal, will follow. I do not think that the locking of the Darling will bring about very great results in this direction immediately. I cannot say why people have not cultivated a larger area of land in this district; but in a recent inquiry a pastoral tenant, in support of a contention as to the worthlessness of this country, said

30 that a certain crop cost him £20 a ton, while the cost of carriage only for bought produce came to £16 a ton. When the matter was gone into further, we found that, taking an average of five or six years, the cost was about £8 a ton to get a crop, while the carriage came to £8 or £10 a ton for bought produce; but, notwithstanding this, the man said that he was determined to give up growing anything more. What he had grown was grown without the aid of irrigation. I do not think that the mere raising

35 of the water-level 10 feet would have much effect in increasing the area under cultivation in this district; but directly the water gets down below ordinary summer level it becomes very hard. If there were always 10 feet of water in the river, the probability is that it would never get hard, and that would make a great difference to people wanting to use it for their gardens. I do not think the proposed scheme would induce people to pass better country to come out here. To induce small settlement you must have

40 three or four successful settlers. At North Bourke there are some thousands of acres which could be taken up to-morrow. I have already recommended that something should be done with that land. I am certain that there will never be a rush for land in this district; the growth of population will be gradual. Most certainly if the scheme were carried out there would be an agitation for the improvement of the river further down. People will ask for anything if they have the most remote chance of getting it. It

45 appears to me that the object of the scheme is to feed the railway line. If you went as far as Louth you would bring wool from there to Bourke; but during the last seven years they have only missed twice in bringing their wool here with the river in its natural condition. The scheme, if carried out, would make Bourke the depôt for the district. The Brewarrina people would sooner have a line constructed from Brewarrina to Byrock. I do not belong to Bourke any more than I belong to Brewarrina or any other

50 town; but I find the railway here, and I say that that circumstance must be considered. If the railway had been taken to Brewarrina in the first instance, it would have been different. The locking of the river will do very little at the present time to increase the value of the country along its banks. The river has never utterly failed between here and Brewarrina, and the lessees would resent any attempt to increase their rent because of the construction of this work.

55 *To Mr. Trickett:* I am sure that there would be no sufficient revenue in the near future from the expenditure of £120,000 on this work. I am not of opinion that sheep-farmers would willingly pay 6d. or 1s. an acre for the use of water to irrigate grazing land. With regard to lucerne, you could get six crops per annum up here with irrigation, and without any rain at all; but a timely fall of rain would make a great difference to those crops. Lucerne will keep alive, but it will not do its best in hot weather

60 without rain. By the locking of the river you get better water, and have it more evenly distributed; but I am not prepared to say that in the near future any large revenue would be derived from the increased value given to the land. The land at North Bourke is suitable for settlement by the small holders, and it was for settlement of that kind that I recommended it. Irrigation will only pay as an adjunct to a large pastoral holding, or to a large industry of some kind. There is no outside market; in fact, a man would

65 have very little market unless he provided it for himself. The station-owner, the wool-scourer, the big contractor, or anyone having a large number of men to feed, could always make his garden pay. With regard to the land at North Bourke, I think that carriers, teamsters, and men of that kind, could take it up in small areas, make their homes there, and grow chaff for their horses in their spare time. Now that most of the camels have gone there are a good many teams in the district. I do not know of any other

70 land, except that at North Bourke, close to the river between here and Brewarrina, which is similar to the land at Pera. Most of the country is a grey cretaceous clay. I cannot express any opinion upon the question of tonnage dues.

*To Mr. Wright:* I think that in course of time people are bound to try and turn part of this district into an agricultural district; but it will be a matter of time. First one person will come, and then

75 another. I was informed by Mr. J. T. Gibson, of the Western Engineering Works, who has made a very fine vegetable garden and orchard, that the expenditure paid him very well, because he could supply what he grew to the persons employed by him; but that the local market was limited. A great many of our cabbages come from Victoria. The Pera Bore Settlement I look upon as an experiment pure and simple, and although I take the greatest interest in it, I should not like to express an opinion with regard to its chance

E.  
MacFarlane,  
Esq.

23 June, 1896.

chance of success until I see how the people get on there. I do not think that 15,000 acres of land between here and Brewarrina are likely to be irrigated just yet, even if the proposed scheme is carried out. No pastoralist would pay 5s. per acre per annum for the right to take water from the river. It would cost him 18s. 4d. per acre to pump the water, and adding the license fee, his expenditure would come to £1 3s. 4d. per acre per annum. Very little direct revenue will be obtained from the scheme. I see no immediate prospect of a large return from the land to be affected, nor do I see any prospect of any large increase of settlement just yet. 5

*To Mr. Lee:* My answers will apply ten years hence. I do not think that in ten years time there will be sufficient settlement in the district to give much revenue to the State in return for the benefits conferred by this scheme. The land between here and Brewarrina is mostly under pastoral and homestead lease. These leases terminate in twenty-eight years from 1885. Any land required for closer settlement can be resumed under the provisions of the Act of 1895; that is, if it is within 10 miles of the town. If 15,000 acres were required between here and Brewarrina they could be easily obtained. There is that area suitable for irrigation within 3 miles of the river banks. Not many of the homestead leases between here and Brewarrina are in the hands of the original selectors. Going up the river you pass through Mooculta leasehold area, where you will not find a homestead lease; then you get to Beemery, and a few miles above Beemery there is a number of homestead leases, all fronting the river. The number of homestead leases applied for in this district during the present year is 33. I was at Brewarrina on the 6th June, and there we dealt with twenty-nine applications for homestead selections and settlement leases. Of these the Board confirmed twenty-five. The areas applied for varied from 500 to 10,000 acres. Fourteen or fifteen applications were for land near Brewarrina, upon part of the Brewarrina Common recently thrown open for selection. The rest of the land is scattered about in various parts of the district. All the land thrown open at Brewarrina for homestead selection this year was taken up at once, and for some of the blocks there were four or five applicants. People like to keep near the town; they do not want to go away from the towns. These applications were all made by people more or less connected with Brewarrina. As families grow up they must throw out shoots. These people will engage in carrying, and do other things of that kind. With regard to the Government providing water for small settlers on the river, I would point out that water can be supplied more cheaply at Pera, but there are still nine blocks there which are waiting for people to take them up. Then, too, the land on the banks of the river is liable to inundation, while the land at Pera is not. The flood-water could be banked out; but people would sooner go where there is no risk of flood. Eventually the country must be populated, and then people will be compelled to do for a livelihood things which they will not do now. People will sooner go where they can have a gravitation supply, and where their land will be beyond the reach of floods, than where there is only a pumping supply and land will be liable to inundation. If small settlement is to be established along the river it will be impracticable for every man to provide his own pump. There must be a community of interest in the pumping machinery. It would make it easier for the settlers if the Crown pumped the water; but I do not think that even that would induce close settlement upon this particular river at the present time. What will induce it in the future will be the pressure of necessity. My views as to the settlement of this district are that it will be used for pastoral purposes for many years, though it will be improved, and gradually, as population increases, the soil must be brought to its greatest production by the use of water. It is too early to take a very large step in the way of providing water just yet. If you determine to construct a railway to Brewarrina, I say "do not lock the river"; but if you must spend £120,000, I say, "lock the river in preference to making the railway." I think, however, that neither work is necessary at the present time. I do not see what is to make either the one or the other necessary. 45

*To the Chairman:* The people of Brewarrina can take their produce to Byrock as easily as to Bourke, though, of course, if the river were permanently navigable, the cheapest thing for them to do would be to send their produce to Bourke. There is not sufficient traffic to justify the construction of a railway from Byrock to Brewarrina, and it appears to me that there is not sufficient traffic to justify the expenditure of £120,000 in improving the navigation of the river. In my report I recommended that only 300 acres should be offered out of 3,000 acres which, in my opinion, would be suitable for cultivation, because I considered that they would have quite enough to do to get rid of the produce of 300 acres. The approximate cost of providing pumps, boilers, main distributing channels, and engineer's house for such an area would be about £3,000. I estimated that 408,375 gallons of water would be required for each working day—about two-thirds of the estimated flow of Pera Bore. The cost of irrigation, distributed over 600 acres, would be 18s. 4d. an acre; that is, allowing for wages and fuel, but not the interest on the capital cost. I have no doubt that a Government supply could be given much more cheaply; 11s. 8d. an acre was for fuel. An experimental irrigation area should be tried upon the completion of the present weir. 55

*To Mr. Black:* It would be possible to create small settlement areas on the river between Bourke and Brewarrina without any disturbance of existing tenants that is worth consideration. You can always take a reasonable area out of a pastoral property for sound purpose. For instance, the Pera Bore Settlement was taken out of the Fort Bourke run. There are no large reserves on the river. There are some small reserves to allow access to water; but there is no reserve in any one place containing 600 acres. The reserves contain about 100 acres, or some area like that, and they have all been offered for annual lease. 60

WEDNESDAY, 24 JUNE, 1896.

[The Sectional Committee met at the Council Chambers, Bourke, at 10 a.m.]

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (CHAIRMAN).

5 The Hon. WILLIAM JOSEPH TRICKETT. | THOMAS HENRY HASSALL, Esq.  
 CHARLES ALFRED LEE, Esq. | GEORGE BLACK, Esq.  
 FRANCIS AUGUSTUS WRIGHT, Esq.

The Sectional Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

10 Ernest Charles Millen, Esq., Council Clerk, Bourke, sworn, and examined:—

*To the Chairman*: I entered upon my present office in March, 1890. The rental value of the improve-  
 ments in the municipality at the beginning of February, 1891, was £31,781, while the capital value of  
 unimproved land was £65,000. The area of the municipal district is 44 square miles. During the  
 municipal year 1891-92, the amount received from general rates was £1,930. During the flood year we  
 15 got very little revenue, and when I entered upon my present position there was a lot of arrears. The  
 rental value of the municipality in February, 1892, was £36,500; the capital value of unimproved land,  
 £63,000; and the amount of rates received, £1,608. In 1893 the rental value of improved properties  
 and the assessments upon the capital value of unimproved properties amounted to £37,700, while the  
 revenue for the year was £1,500. In 1894-5 the rental value was £39,000; the capital value, £59,000;  
 20 and the revenue, £1,552. In 1895-6 the rental value was £33,420; the capital value, £47,893; and the  
 revenue, £1,340. These values are fixed by two sworn valutors appointed by the Council. For this  
 year the assessments are, upon the improved properties, £31,000; the capital value of unimproved land  
 is fixed at £47,430; but only a small proportion of these rates has yet been received. There has been a  
 drop in the value of improved property since 1891. In some cases the rental values have dropped from  
 25 25 to 50 per cent. I do not know what the present population of the district is; but when the last  
 census was taken it stood at 3,155, and we reckon that there are now about 180 or 200 more people in  
 the district. The meat-works brought a great many people here, and so has the work in connection with  
 the weir. Until we got the last rainfall we had a severe drought here; the water was then very low, and  
 almost undrinkable; you could smell it as far away as the railway station, when the wind was blowing in  
 30 that direction; the smell was caused by the weeds which grow in the river when the water is low.  
 I cannot say that any epidemic was produced by the bad quality of the water; but a former medical  
 officer in the district said that the water was not fit to drink. For the town supply it is pumped directly  
 from the river, and is not filtered. The district boundaries do not include any homestead leases; but they  
 include the garden at the weir, and a farm at Picnic Point, near North Bourke, where they go in for  
 35 dairying, and irrigate lucerne for their stock. In 1885 I crossed the river with 10,000 sheep, but I do not  
 know anything about it in 1888. The supply of water we have at the present time is very inadequate,  
 and when the river is very low we can hardly keep the town going. We have two Worthington pumps,  
 but the height to which the water has to be raised is a great strain upon them. The Council is of  
 opinion that the proposed scheme would materially assist in supplying the town with water in the hot  
 40 weather, but they have not passed any resolution in regard to it. Of course the town supply will only be  
 affected by the completion of the weir which they are now making below Bourke; it will not be affected  
 by the weir at Stony Point, or any of those higher up.

*To Mr. Trickett*: The Council is not in a position to take any steps towards providing a better water supply  
 than that which we have at present. We understood that at Hay they had erected a larger tower, and  
 45 we wrote for a copy of the plans and specifications; but owing to financial difficulties, we have not been  
 able to do anything yet. The arrangements which we have now for pumping and storing the water were  
 carried out by the Government. We put a dam at the site of the present weir on one occasion, when  
 the water was running very short, though I was not in Bourke at the time.

*To Mr. Wright*: I believe that the construction of the weir below Bourke will throw the water back as  
 50 far as Stony Point. That will be sufficient to meet all the requirements of the town of Bourke, so far as  
 a water supply is concerned.

Mr. Andreas Harders, Acting Sub-Collector of Customs, Bourke, sworn, and examined:—

*To the Chairman*: The following is a statement of the Customs revenue collected at Bourke for the last  
 five years:—

55 CUSTOMS REVENUE collected at H.M. Customs, Bourke, 1891-5:—

	£	s.	d.
1891 .....	29,320	9	3
1892 .....	27,383	16	1
1893 .....	20,051	1	10
60 1894 .....	19,896	13	7
1895 .....	15,668	16	8

NUMBER OF STEAMERS arriving at Bourke, with Bonded Goods, &c., from South Australia and Victoria:—

	Value of Goods Imported.
65 1891.—25 steamers .....	£47,136
1892.—14 steamers .....	30,477
1893.—20 steamers .....	34,312
1894.—20 steamers .....	38,468
1895.—1 steamer .....	2,485
To 23rd June, 1896 (half-year).—3 steamers .....	6,017

70 I think the river was only running for a few weeks in 1895.

*To Mr. Black*: I believe that most of the steamers coming here are owned by Messrs. E. Rich & Co.,  
 though a good many are owned in Victoria.

*To Mr. Wright*: There is no river now. The 9th April was the date when the last steamer left.

To

E. C. Millen,  
 Esq.  
 24 June, 1896.

A. Harders,  
 Esq.  
 24 June, 1896.

- A. Harders, Esq.  
24 June, 1896.
- To Mr. Lee:* My returns are only for goods landed at Bourke. The quantity of goods landed depends entirely on the state of the river. The bulk of the goods come from South Australia, though some come down from Sydney that way. In 1895 about £300 worth came from Sydney.
- To Mr. Wright:* No boots came that way.
- To Mr. Lee:* Bulk ale sometimes comes that way. Sydney merchants may take advantage of the river at 5 times; but their action in the matter depends upon a variety of circumstances. Goods coming here from South Australia come to Bourke partly for local consumption and partly for distribution.
- To Mr. Wright:* The statement which I have just read includes goods coming from Sydney as well as goods coming up the river. It includes all the goods.
- To Mr. Lee:* The Customs Department here takes no notice at all of the trend of the river traffic. There is 10 not a great quantity of bonded goods coming by rail from Sydney for despatch down the river, though there is a good deal exported to Queensland. Very little of the bonded goods going to Queensland go any part of the distance by steamer.
- To Mr. Wright:* A good deal of the sugar used in Queensland is Queensland sugar bonded through. It is taken by team direct from Bourke. 15
- To Mr. Lee:* Bourke is a distributing centre, not so much for the country down the river as for the district all round. The traffic from the country north and north-east of Bourke generally comes to Bourke, in dry seasons on drays, and in good seasons by the river. Sometimes it comes from as far as Walgett by river.

Mr. Arthur Senior, wool-scourer, near Bourke, sworn, and examined:—

- A. Senior, Esq.  
24 June, 1896.
- To the Chairman:* I know the proposal under consideration, and I know the river well. I think that the proposed works would be a means of opening up the country, and advancing the prospects of the district, and I think that they would contribute towards the revenue of the country. At times there are scores of tons of stuff which cannot be delivered, because we have no available carriage except the camel teams, and the horse teams, and the prices given for freight scarcely pay the men for feeding their horses. 25 If the river were improved it would be a great advantage to the wool traffic and other traffic from out back. We have been terribly handicapped in one way and another in competing with the traffic from the back country so far. The completion of the proposed works would advance, not only the interests of the town of Bourke, but the interests of the district generally. I have been a wool-scourer for about eighteen years, and my industry has been fairly profitable, though we have had reverses at times. I used to be 30 120 miles down the river. I cannot say that I, individually, would be benefited by the construction of the proposed works.
- To Mr. Hassall:* If the river were locked, industries would spring up along the banks. People might go in for irrigation, combined with small settlement. Small areas might be irrigated and cultivated, and the rest of the land used for grazing, and then, in bad times, what was grown on the irrigated area could be 35 used for feeding the stock. I think that under those conditions land might be cut up into small holdings. Men settling on the river would go out shearing part of the year, and make as big a cheque as they could, and then they would go home and cultivate their land. At present, we have only the local market; but the proposed works will bring a certain amount of population, and, if we carry the thing out systematically, we may be able to compete with some of the towns down the line. We could not compete with towns 40 down the river, because they would be practically in the same position as we should be in. I know a place down the river where a man has a private garden, and last year he made £150 by cultivating only a few acres. He took his produce to the different stations round about. The settlers near the artesian bores may supply the shearing sheds round about; but they could not cart their vegetables 60 or 70 miles away. If the river were permanently navigable, a steamer could leave Bourke to-night and be in Brewarrina 45 to-morrow morning, and, with a constant river, there would probably be a boat every day. Produce could be taken from Brewarrina to outlying districts, though, of course, the longer vegetables are in transit, the worse their condition becomes. Still the steamer rates are very low. With a system of irrigation, the country would grow anything. A few years ago we did not have to exercise ourselves about the matter at all, because we could get any amount of money; but now people have to take to small things 50 and go in for everything from which they can get anything at all. You could not go in for an extensive scheme of irrigation; but there is a small market. Of course there are many people who would not have the means to buy an engine and boiler to pump their own water; but no doubt, if the scheme were carried out, some settlement would be induced. The principal object to be gained is the improvement of the river for navigation purposes. 55
- To Mr. Black:* The state of the river never interferes with my work; but the man who was there in 1883 and in 1884 had to dam the river to keep sufficient water near his pumps. Last year was the worst I ever experienced. The water was terrible, its bad condition being caused by the low state of the river and the mineral springs in the banks. You can scour with it; but it takes so much more material to bring the water to a proper consistency. If there were a large body of water in the river, the salt 60 springs would be forced back. Green weeds grow half across the river at times.
- To Mr. Lee:* I have never been engaged in agricultural pursuits, and I do not know very much about agriculture; but I am now trying a little on a small scale. I have been one trip up towards the Queensland border, and I think that the improvement of the river would influence traffic in this direction which does not now come here. I think that if the river were improved, it would drain all the country up to 65 Goodooga and round there. I can hardly say which I would choose if I had to decide between a railway from Brewarrina to Byrock and the locking of the Darling; but, of course, water carriage is cheaper than railway carriage, and cheap transit is the basis of all successful commerce.
- To Mr. Trickett:* I possess a freehold about 2 miles below Bourke, and, when in full work, I use from 70,000 to 80,000 gallons of water a day. The effluent I put upon the land, though we used to let it go 70 back into the river. This year I am getting an extracting machine to take out the yolk and grease, so so that they may be used for soap-making. If the river were dammed, my business would not affect the water.
- To Mr. Wright:* When the weir below Bourke is completed, I shall have an abundant supply of water, and there will be a good supply for the town. I think that the improvement of the river will have a 75 tendency to bring the pastoral traffic to Sydney. I think that traffic will very likely come from the Queensland

Queensland border. I do not think that the duty on the Queensland wool will affect the traffic much, so long as the run-holders can get a good sale for the wool. I do not know much about the traffic of the district. I do not know whether the conservation of water in the river will do much to increase the value of the land adjoining the river; but I think that ultimately it will have that effect.

A. Senior,  
Esq.

24 June, 1896.

5 Edward Davis Millen, Esq., M.P., sworn, and examined:—

*To the Chairman:* I am a journalist and Member for the Electoral District of Bourke. I am familiar with the proposal before the Committee. I had not intended to make any statement before the Sectional Committee; but I have been so long interested in this subject, and have such an intimate knowledge of the district affected by the proposal, that I think I should do so. The Brewarrina district is unquestionably the finest pastoral district in the Western Division. It has the heaviest settlement, and, in my opinion, has developed to such a stage as to entitle it to some better means of communication than now exist. There has always been, and is now, a demand which I regard as legitimate for railway communication with the Western line. I view this proposal as an alternative to that. The railway proposal, if carried out, would offer the advantage of better transit; but would not offer, as the improvement of the river does, that advantage coupled with an abundant supply of water. Further, unless the Railway Commissioners undertook to carry traffic on such a railway at less than cost, they could never control the trade of the district, except in the dry times, because the river, when flowing, must always obtain the traffic. In other words, to construct the railway would be to construct it for half the traffic; to lock the river would be to lock it for all the traffic. The question of the revenue to be derived from this work might be considered in this way. I do not pretend that at the present moment the State would derive a direct revenue sufficient to pay interest on the cost involved. Neither would it derive such a revenue from a railway, and the point I submit for the consideration of the Committee is, whether the loss involved in any improvement of the river would not be less than the loss involved in constructing a railway. Then, too, there is the indirect advantage which the State would derive from this proposal. In spite of the statements which have been made to the Committee, that there would be no added value given to the Crown lands of the district, I may say that that is opposed to all experience. If it were not so, every railway that we have constructed would stand condemned. The facilities given for the transshipment of produce must add to the value of the land, and, as this land is the property of the State, the periodic re-appraisements should enable the State to reap some of that added value. It is possible that land immediately upon the banks of the river might not have any increase of value given to it by reason of the additional supply of water, but all the land the traffic from which would drain to the river would have an added value by reason of the cheaper carriage. As to the effect that a water supply has in adding to the value of land, I think you can desire no stronger instance than that of Pera Bore. That land was offered at £1 an acre before the settlement was established; but by supplying it with water a capital value of £20 an acre has been given to it. £400 is the departmental value of each 20-acre block, and it is a valuation which at least ten settlers have regarded as extremely reasonable. I should like to read one or two quotations from an American Official Report on this matter, because I take it that what has happened in one country might under roughly similar circumstances happen here. I quote from the Labour Bureau Report of Kansas State, America, issued by Engineer Hinckley. He says that the State of California appointed—

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40 A State Engineer, with an appropriation of \$100,000, for survey and investigation of two years. As the result, 1,000,000 acres of desert land are now worth \$150,000,000, a value of \$1,500 for each dollar invested. The State of Colorado took similar action, and 900,000 acres of barren land became worth \$60,000,000, and the agricultural productions, with only ten years of irrigation development, have for years exceeded that of her gold, silver, lead, iron, and coal combined. So in the arid States 3,500,000 acres of the desert have become worth \$300,000,000. The above figures are based upon average values. There are thousands of acres in California that are worth ten times the average, because they are more intelligently handled. For example, while the average value of southern Californian lands under irrigation is only \$150 per acre, there are plenty of orchards that are paying annually from \$1,000 an acre upwards, annual profit; and there are plenty of potato lands in Colorado that pay \$500 a year per acre.

Some questions have been asked as to the effect likely to be obtained by diverting traffic from Narrabri. Walgett is, roughly, 90 miles east of Brewarrina by road. The traffic likely to be attracted to Brewarrina, as the head of the river, would embrace country the eastern limit of which would reach Walgett naturally. If the river were running under natural conditions the traffic would come from Walgett, and from the north and east of it. The effect of the locking of the river upon that traffic would not extend beyond midway between Brewarrina and Walgett. The area likely to be affected by the river runs some distance into Queensland, but how far, one cannot say without knowing the conditions of the Queensland lines. It is a question of the concessions offered by our railways, and by the Queensland Government. I have no reason to suppose that the construction of the proposed works will divert any Narrabri traffic this way. The traffic that comes here now will come here when the river is flowing, whether you carry out the proposed work or not. As throwing some little light upon the general opinion entertained regarding this proposal, I may say that I know the feeling of the people in Brewarrina very well. They are opposed to this proposal; but it illustrates the general belief in water carriage to know that they are strong advocates of the locking of the river from Brewarrina upwards. They believe that the railway should be taken from Byrock to Brewarrina, and that the river above Brewarrina should be locked to form a feeder to the railway. The result of my sixteen years' experience in this district—an experience gained, not only by knowing the men of the country, but by having been a settler myself—is that the only small settlement possible in the Western Division is very small settlement with cultivation. Homestead leasing has been a distinct failure. The only small graziers who have made a success are men who have had special advantages or special aptitude, or who have emerged from the state of the small land-holder into that of the big land-holder. The effect of the locking of the Darling River upon irrigation would be twofold. It would increase facilities by raising the level at which water could be obtained, and it would give a much greater advantage by creating a certain water supply. At the present moment the state of the river has retarded irrigation operations. Every man who wished to irrigate has been confronted with this difficulty, that at the time when he wants most water—that is, during droughts—there has been the danger that he will have none, and when his pump is required to do most work the water is so low as to make it necessary to consider whether any sufficient area can be irrigated with it. If provision is to be made for irrigation, we must remember the peculiar industrial conditions which exist in this district. We have gathered round Bourke some 500 carriers, with the majority of whom I am personally acquainted. Most of these men

E. D. Millen, men will admit, if spoken to, that they are working, taking one year with another, largely to pay forage bills  
 Esq. incurred with the storekeepers during dry times. Most of them have a knowledge of farming, but not of  
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 for their horses and make homes for themselves. Generally, a carrier, when he has finished his trip, finds  
 that the proceeds are swallowed up in payment of the bills incurred either in maintaining his own house- 5  
 hold at home or in providing forage for his teams on the road. Opportunities for irrigation would enable  
 carriers to grow all that they require that can be produced from land, and if these opportunities present them-  
 selves in favourable localities, a very large settlement—that is, comparatively—would follow. Whenever  
 land has been thrown open in the immediate vicinity of the towns here it has been simply rushed. Four  
 and five applications have been lodged for single blocks, to which no water is supplied, and most of these 10  
 blocks have been taken up by men belonging to the class to which I have just referred. I do not think  
 it is outside the province of the Committee to consider the moral effect which settlement of this kind  
 would have upon the population. At the present time the men to whom I am referring have no chance of  
 becoming anything better in the future than they are to-day. They cannot become squatters. If they  
 become homestead lessees, it means, sooner or later, financial ruin to them. The only chance they have 15  
 of doing anything for themselves is, by the State offering such facilities as could be given by supplying  
 water to the land. The question may be asked, "Why has no settlement taken place hitherto?" One of  
 the reasons why no settlement has taken place is that Bourke, like the rest of the Colony, has, up to the  
 present, been living in a state of fictitious prosperity, due to the influx of borrowed money. Untillate years  
 all the stations have been receiving large advances to enable them to make improvements, just as the Colony 20  
 has borrowed money to carry on public works. Men have, therefore, found it more profitable to give their  
 services in the work of constructing tanks and other station improvements, and have got higher prices for  
 their labour than they can now command. Hitherto they have been free from that pressure which seems  
 essential to the opening up of new industries. Another reason why no settlement has taken place is that  
 we are distinctly a pastoral population. The present occupiers of the land have little inclination for, and less 25  
 faith in cultivation. The prejudices which the larger holders have against small settlement are too well  
 known for me to do more than refer to them. Perhaps the greatest obstacle to settlement has arisen from  
 our land laws. Although the State owns millions of acres in the district, a man wanting land for irrigation  
 cannot go and select it except at the Pera Bore. With regard to irrigation, it is necessary to remember  
 that isolated settlers are hardly likely to succeed. For the purpose of raising water economically, it is 30  
 necessary that irrigation settlers should be grouped together, as the larger the supply raised the less it costs  
 per unit. Hitherto no opportunities have been given for the establishment of settlements which could supply  
 water to themselves or allow a private capitalist to come in and start a scheme similar to that of Mildura,  
 but on a smaller scale. Yet agriculture is advancing in this district. A few years ago it was a very rare  
 thing indeed to find a garden or any cultivation at a homestead. Now it is very rare to go to a station 35  
 at which some cultivation is not being done. I cannot for the moment think of more than two stations  
 in this district on which there is no cultivation. Although many doubts have been started as to whether  
 irrigation pays, it is a suggestive fact that those who have tried it never drop it, but are increasing their  
 irrigation area. A few years ago a man was laughed at if he used a plough in this district; but to-day  
 I know of many pieces of land—one containing 150 and another 200 acres—under cultivation. The 40  
 prejudices which exist here, and the want of knowledge of the possibilities of cultivation in a dry climate,  
 are very similar to those which existed in the dry parts of America. The land here is regarded only as  
 suitable for pastoral purposes; but the first irrigationists in America, the Mormons, selected the Salt  
 Lake country because it was one of the most forbidding spots they could find, and they hoped, therefore,  
 that it would repel intruders. The land there is so alkaline that they had to wash it. The only hope of 45  
 settling this district, of doing anything more to it than leaving it to be occupied by sheep ranches, is to  
 provide for the settlement of small areas by means of irrigation. It is evident that we must have facilities for  
 small settlement before we have such settlement, and it is idle to suppose that people will come and sit down  
 on the banks of the river waiting for the State to commence the work of water conservation. Facilities must  
 first be offered to the people, and then, no doubt, the people will come. Until the State does what no 50  
 private individual can do, you cannot expect settlement here. I want, now, to make a comparison between  
 artesian water and the supplies obtained for irrigation by pumping from the river, and in doing so, I make  
 the statement that, except in particular localities and to a limited extent, the supplying of water by pumping  
 is the only way in which any great area of country can be irrigated. It is cheaper to supply water by  
 pumping under the conditions which exist here than by using artesian wells. The Government figures 55  
 as to the cost of artesian bores give the aggregate cost of the bores and the aggregate supply of water;  
 but there is no indication of the small percentage of that water which is suitable for irrigation, which is  
 available close to land suitable for irrigation, and which is present in sufficient quantities to render irriga-  
 tion possible in a locality where the settlers have a market for their produce. I understand that the cost of  
 pumping is estimated by the Departmental expert at £1 an acre, with 5s. an acre added for a license fee. 60  
 If you take the aggregate cost of artesian wells, and divide it by the number of the few wells that could  
 be used for irrigation purposes, it will be seen that the cost of supplying artesian water is greater than  
 the cost of pumping would be. At Pera Bore the added value of a block is £19 per acre. At 5 per cent.  
 that would mean 19s. a year for the use of the water. If the full cost of the bore were charged—and we  
 cannot have a Government farm at every bore to be debited with half the cost of the water—it would be 65  
 found that the total cost to the State of supplying the water is fully £3 per acre; a much higher cost  
 than would be necessary with a pumping scheme. Of the forty-six bores put down by the Government,  
 at least twenty-eight are absolutely unsuited for the purposes of irrigation, or require pumps to raise the  
 water. Of the balance, some are situated in places where you can have no settlement, and others have  
 other drawbacks precluding settlement. One drawback to the use of artesian wells is this, that you can 70  
 never use a bore up to its full capacity. The flow at Pera is roughly 600,000 gallons a day. For all  
 purposes of calculation 1,000 gallons per day per acre is a sufficient water supply for irrigation purposes,  
 and on these figures the Pera Bore would be able to irrigate 600 acres. But it cannot irrigate that area,  
 because you cannot keep the bore permanently flowing, and you have no reservoir. Nor can you make a  
 reservoir big enough to conserve the daily flow until you require to use it in big quantities. The cost of 75  
 constructing a reservoir of sufficient size would so add to the cost of the scheme as to make it, except in  
 special circumstances, prohibitive. The highest success obtained in irrigation is as the result of the  
 application of water at the right time. If you have a bore which can only supply a limited area in a  
 given

given time, that area must be regarded as its full capacity. Pera Bore is probably capable of irrigating 240 acres; but I very much doubt whether it could do so unless a reservoir were constructed. Another drawback to the use of artesian water is that all of it is, to a certain extent, mineralised, or has some ingredient which is not beneficial to agriculture. I must not be understood to say that it is sufficiently injurious to prevent its use; but it would render necessary some expenditure in applying a counteractant. On the river bank, drainage would be easy and natural, and all experience shows that you cannot have irrigation cultivation for any length of time without drainage. That, so far as the bores are concerned, may render it necessary to have a pumping plant for the purpose of drainage, even where you have not to pump to raise the water. As to irrigation settlement on the banks of the river, it would be easy to turn the drainage from them into the billabongs, and thus return it to the river, or even, if necessary, to make a ditch leading back to the river. The question of drainage would be a very different one on the plains, at a place like Pera. I do not know where you could get rid of the water there.

To Mr. Wright: Sooner or later, judging from the American experience, the water sinking through the earth and being drawn up again by capillary attraction will, on evaporation, leave accumulated on the surface of the soil the mineral ingredients now distributed through 2 or 3 feet of the soil. We have occasionally heavy falls of rain in this district which would be quite sufficient to leach the soil; but the difficulty is to drain off the water. That difficulty would not exist where settlements were alongside the river; but it would be very great where, as at Pera, the country all round is practically level. The bore nearest to Bourke is the Pera Bore, 9 miles from here. There is no other bore within a reasonable distance, at which it would be possible to establish an irrigation settlement. Walkden's Bore is the next nearest; but it gives so small a supply that, while a solitary settler might do a little there, there is no room for much settlement, while the soil in places is so shallow as not to make it likely that an experiment of that kind will be made there. At Gidgea Camp Bore the supply is insignificant, and the Department recently sent up pumping machinery to thoroughly test the bore. The lessee of the bore has asked for a decrease in his rent, because the supply is not sufficient for irrigation purposes. The next bore is Sibraas, 18 or 20 miles out. It has a flow of 700,000 gallons a day. The next bore is Kelly's Camp, 30 miles from Bourke; it has a flow of 600,000 gallons a day. Then comes the Native Dog Bore, 40 miles from Bourke, with a flow of 500,000 gallons a day. These bores, by reason of their distance from Bourke, the central market of the district, are unsuited for irrigation purposes, because the cost of carrying produce in from any settlement there would render farming operations unprofitable. The Department of Mines has endeavoured to obtain water closer to the river, but has always failed to do so, and private enterprise has made the attempt with similar results. The flows from the bores, so far as they have been ascertained, indicate that the nearer you approach the river from a northerly direction the more uncertain becomes the flow of water. Pera Bore is the only place at which a substantial supply of good water has been obtained anywhere close to the river. As another reason why no settlement can take place round these bores for the present, I might add that the bulk of them are leased for ten years. I need not refer to the bores on the Wanaaring Road, because the water there is too bad. In one place, where the Department keep a man at a cost of £104 a year, he has to go some distance to get his own drinking-water. In connection with artesian supplies there is always considerable risk of the water failing; and here I propose to read some statements as to the experience in America which show that bores there have failed, involving very serious consequences. At Yantabulla, in this district, the Department put down a bore, the flow of which has decreased from something like 300,000 or 400,000 gallons a day, to a miserable trickle of 7,500 gallons a day. When the present tenant took it over the supply had already gone down to 27,000 gallons a day; but when water was first struck the Departmental estimate was nearer the larger figures which I have given. At Wangamana, 70 or 80 miles from Bourke, the supply has failed altogether, and I know of one or two other cases where the owners of private bores suspect a reduction in the flow. I should like to draw the attention of the Committee to what has happened in America with regard to artesian bores. I wish to read from the United States Geological Survey Report. A Commission was appointed to inquire into the whole subject of artesian water and irrigation, the President of the Commission being Major Powell, and he states generally upon the subject of artesian irrigation:—

Something can be obtained from artesian wells, but not a very great amount. The experience from artesian wells fully warrants what I am stating now. They have been bored at different places in the world, and used for irrigation wherever they could be used; and it bears out the statement I make, that the supply from artesian sources is always limited; is always comparatively small; and that no great area can be irrigated thereby. If all the artesian wells in the world, which are used for irrigation, were assembled in one county in Dakota, they would not irrigate that county. \* \* \* We see an artesian well in the arid country, with a bore of 4 to 6 inches, pouring out a fine stream of water; and it looks a large stream, and strikes the eye with a good deal of force; but when you actually compute the amount of water it supplies you find that amount is small.

One of the first essentials to success in an irrigation settlement is that there should be a sufficient number of settlers to enable them to co-operate with each other much in the same way as the dairy farmers do. An isolated fruit-grower cannot very well handle his product to advantage; but where there is a sufficient number of settlers gathered round one place to be able to control in common the machinery required for making fruit-boxes, for grading and drying the fruit, and for carrying out all the necessary operations connected with the industry, there is a reasonable prospect of their making a good living. To supply a large settlement you would require either a big artesian well or a number of such wells. We have no artesian well which gives a supply big enough for the purposes I have indicated, and this is what Major Power says on the subject of multiplying wells:—

If a series of neighbouring wells be bored at the same level, the individual discharge of all the wells is progressively diminished and the total discharge is at first progressively increased, but the limit of discharge for the locality is finally reached, and then the boring of additional wells gives no advantage. If two wells in the same vicinity head at different levels, the one at the lower level discharges more water than the other, and the flow of a well, or of a group of wells, may be entirely destroyed by the sinking of new wells at a lower level. The same effect is produced by pumping water from these wells which is equivalent to a discharge at lower level.

I have here some figures which show what happened when they began to multiply wells in America. I could refer to eight or ten similar instances; but I only propose to quote the case of Rockford. The first well sunk there yielded 1,000,000 gallons; another well was sunk, and the two yielded 2,000,000 gallons; a third well was sunk, and the three yielded 2,600,000 gallons; a fourth well added 400,000 gallons; and a fifth well brought the total supply up to 3,500,000 gallons. A private well was afterwards drilled a

E. D. Millen, Esq., mile away, at a level below the city wells, and the supply given by the city wells immediately fell to 2,500,000 gallons. It is further stated:—

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If the supply of water impaired by multiplication of wells is restored by pumping, the capitalisation of the cost of pumping must be added to the cost of the plant in making a computation, and in such case the investment may be disastrous.

Major Powell is speaking of boring where the cost is one-half or two-thirds lower than what it is in this country. He expresses the opinion that the quantity of land which may be irrigated from artesian sources is very limited, and he supports that statement by this remark:—

In California the wells are used for irrigation in three counties only, and it is stated by the State Engineer that less than 3,000 acres are irrigated. In Utah about 2,000 acres are irrigated from these wells. In each of the other counties named the extent of irrigation (artesian) is very small.

From official figures published by the United States Agricultural Department, I find that there some 8,000,000 acres of land are under irrigation, excluding what is "under ditch", that is, capable of being irrigated but not so irrigated. The area irrigated by artesian water is roughly 100,000 acres. As to the possibility of irrigating around artesian wells, I do not want the misapprehension to go abroad that we should not utilise the water there; but the area available for the purpose of settlement and irrigation is, as I have shown, necessarily limited. Opinions have been expressed on the question whether fixed or movable weirs would be the better to adopt in damming the river. I have not the slightest doubt in expressing an opinion which is the result of my observation on what has taken place, that the construction of a fixed weir in the Darling would entail injurious consequences. At every position in the river where there is a permanent obstruction such as the rocky bar at Brewarrina, and other similar bars which cross the river at irregular but frequent intervals, there is evidence to show that the water is trying to bite its way through in some other direction. At Brewarrina and Collawaroy there are rocky bars, and immediately above them the river has formed the channel known as the Cato Creek on the north side, and the Tarrion on the south side. To a less pronounced extent the same thing is going on over the whole length of the river channel of which I have any knowledge, that is from Tilpa to Mungundi. The questions as to what can be paid for the use of land and water for irrigation purposes is very much misunderstood in a district where people are in the habit of getting land for nominal rents and taking from it produce of very small value. The return from lucerne, it is safe to estimate, would be here from £15 to £20 or £25 per acre, according to the suitability of the land and the intelligence of the man who cultivated it. The cost of clearing land here is unduly high, because the business of clearing is a new one. The men engaged in the work have little of the experience and none of the appliances which tend to reduce the cost in other districts where the work is understood. The cost of land is very small, and adding the cost of clearing and preparing and the cost of water, taking the Departmental figures, the purchaser would have to pay very little to get a crop compared with the value of that crop. The total cost to the producer who irrigated would be much less than the nominal rental now paid by the grazier compared with what he takes off the land. When irrigation is understood here, men will be able to pay the rent demanded by the Crown, and as much as £4 and £5 per acre for the use of water. Other produce which can be grown here will command a much higher price than lucerne. I am speaking now from practical knowledge which I have gained by irrigating small parcels of land under extremely adverse conditions as to plant and suitability of soil. The opinion prevails that some rain is necessary for the growth of lucerne and other crops; but my experience is that crops which you can irrigate, and lucerne particularly, do best in the driest and hottest summers. The increased heat coupled with the water which you give them is conducive to rapid growth. At Torallie Station, 40 miles down the river, in one of the worst years we have known—1888—I saw lucerne cut three weeks after the previous cutting, and the owner informed me that he had obtained eight crops in the twelve months. At Brewarrina, on soil less suited for irrigation and for the growth of lucerne, I obtained even better results, which I attributed to the fact that the area was smaller and was more closely attended to.

*To the Chairman:* The conditions necessary for settlement would be created by the completion of the weir now in course of construction below Bourke, so far as the area affected by that work is concerned.

*To Mr. Hassall:* The reason that the system of homestead leasing has been a failure is that the amount which a man could make out of a block of 10,240 acres, using it for pastoral purposes, was not sufficient to give him a good living and to pay interest on the capital involved. I think that it would be better to have smaller areas and to work them intensively rather than extensively. While many of the homestead lessees have water frontages, the majority of them have not. It would be possible to use some of these water frontages for irrigation; but the majority of homestead lessees in the district know nothing of agriculture and less of irrigation, and not one man in ten has sufficient money to pay for the erection of a pumping plant. To make irrigation a success, we must have what the Americans call the colony system. In this way water can be raised much more cheaply than where each settler pumps water for himself. I think that if small settlement was made possible, carriers and others would take advantage of the opportunities afforded. A little while ago I submitted a proposal to the last Government for the throwing open of an area of land at north Bourke, and I gave the names of seventy men who were willing to settle there; but there was then no law which would enable them to get the land under the conditions they required. One of the first conditions necessary for small settlement is a permanent supply of water; this would be secured by the carrying out of the proposed scheme. Another is that land should be available, and this is provided for by the Act of 1895. I would expect other settlement besides that undertaken by carriers; but I referred to the carriers, because they constitute a large body of men who would be inclined to take up these blocks in the early stages of irrigation settlement. There is a prejudice against artesian water which may or may not be well founded, and, to account for the fact that all the blocks at Pera have not yet been taken up, it must be remembered that in the initiation of new enterprises the majority of people, with a caution which is perhaps commendable, stay back until they see results. Then, too, the people here do not understand small settlement. Agriculture is struggling to be born in this district; people are waiting to see what is going to happen. Until you give facilities for coming to the district people will not come. I do not know any district which is better for agricultural purposes than this is. Under irrigation we could grow fruit here almost with the certainty that Providence would not interpose with an untimely fall of rain, and destroy our crops just as they were ripening. As to Mildura, I think the place will ultimately be a success. The settlers there had to give Chasley Bros. £20 an acre for their land, and they purchased, as many

many people have purchased in this Colony, more land than they could afford to work, availing themselves of the time-payment principle. The railway brings into the district £70,000 worth of produce which could be grown locally. If every man who went on to the land grew £200 worth of produce, there would be an immediate local market for 350 adult male settlers, or, adding the usual complement of wives and children, 1,750 souls would be maintained, which would increase the population of Bourke by about one half. The more you produce, the more you increase the demand for what is produced. In reply to the question, "why has not someone already taken advantage of the available market?" I would say that there must be a starting point somewhere. There was a time when no one raised wool in this district. Then somebody started it, and everyone rushed the district. There was a time in our own life-time when not one pound of wool was grown in the district. The district will be used for wool growing until people discover that something else will pay better. Hitherto the great problem has been the water problem. That problem has now been solved, and the next problem which presents itself, and which will take a few years for solution is how to utilise the water which has been conserved to produce food for stock. There is no reason why the local market should not be supplied with locally grown produce, and I contend that we can also supply the outside market. Higher priced products such as fruit, which can be produced under the conditions prevailing in this district much more profitably than in cooler districts, will stand the carriage to outside markets. My difficulty is, not to find a market for the produce, but to get sufficient produce raised to allow of economical handling. In America it has been found that the most successful results have been obtained by sending fruit to a central factory, where it can be handled with the proper machinery and appliances at a minimum of cost. In California the average rainfall is from 6 to 8 inches a year, but here we have from 15 to 16 inches a year, so that we should only require two-thirds of the artificial water that they would want. So far as soil is concerned, the best American authorities agree that one could not fatten a beast off their soil naturally, but we know what our soil can do. The Americans are now taking produce grown in California and shipping it to England, then out to Australia, and finally it is sent up here from Sydney, and, as I am disinclined to believe that our people are inferior to the Americans, I see no reason why we should not compete with them in the London market. The cost of carriage is counter-balanced by the lower cost of the land. I know the report of Colonel Hinton. He is the head of a department in America, much as Mr. Boulton is here. Major Powell was appointed to preside over a commission enquiring into the whole matter of artesian supplies. The two gentlemen are diametrically in opposition. One is a scientific man, and has the advantage of the scientific evidence which was given before him, the Commission having existed for two or three years, and surveyors and geologists have come before them. Colonel Hinton, though an official of considerable knowledge, is, I think, much more interested in keeping up the reputation of his department than in arriving at a proper verdict as to the conditions which prevail. With reference to the remarks of Professor Hill as to the development of the artesian belt in Texas, the same thing applies here. In no part of New South Wales has there been a grander development than by artesian water. I do not deny the advantages of artesian supplies, but I say that the conditions render the supply from the bores unsuitable for large settlement. For various reasons there are only one or two bores at which cultivation can be carried on successfully. With reference to the statement that North Bourke was the only place at which land was practically available for an irrigation settlement, I daresay that the witness who made it, if asked whether he could find land available for the purpose under the provisions of the Act allowing for resumption for public purposes, would probably say that there is any quantity of land which could be taken without serious disturbance to the interests of anyone. I could mention twenty spots which are eminently suited for settlement; but before you can expect settlers to apply for it you must make it available. It is only a question of resuming a small portion of ground. The man who holds 250,000 acres of land is not seriously affected if you take 5,000 acres away from him. If the Government would give me the right to a portion of land on conditions as favourable as those given by the Victorian Government to the Chaffey Bros., I could find the capital to carry out the work. I commenced my advocacy of the proposal from a navigation point of view; but I pointed out that the water you conserved would cost you nothing. If the scheme were carried out, it would provide access to an important district, and you would have water conserved which would cost you nothing. The locking of the river would give to the richest pastoral district in the Western Division what it is entitled to, namely, easy access to market. The opinion of the people of Brewarrina is worthy of consideration. If the Railway Commissioners affirm that they would lose greatly by the making of the railway, there would be an injury done to the State if that line were made. The people of Brewarrina district are entitled to some means of getting to market, and it is for the Government to say whether they will give them better navigation or a railway. Government have to consider whether the district would be better served by a railway from Byrock to Brewarrina, which would not allow of irrigation, or by the proposed improvement of the Darling, which would allow of both irrigation and navigation. The biggest landowner in the district is the State, and surely some consideration must be given to the interests of the State, even as against the interests of a few private landowners in the town of Brewarrina? Human nature is the same at Brewarrina as elsewhere. Having lived there for a long time, I am of opinion that the producers are anxious to get a double road to market. The river often runs now under its natural conditions, and, if a railway were constructed, and the river were up, the people of Brewarrina would play off one against the other.

*To Mr. Trickett:* In America the Government does not carry out irrigation. It only gives facilities to private individuals for doing so. The principle there has been for each individual state to pass a general law under which private charters may be obtained. Private individuals come in and acquire certain rights. The general practice has been for those who propose to start a large irrigation colony to acquire a sufficient area of land. They then construct the necessary water-works, and sell the land, together with a right to water. The Chaffey Brothers obtained their experience at the Ontario colony. Most of the capital invested in the Western irrigation States has been eastern capital. Having calculated the probable outlay that would have to be incurred in connection with a fair-sized irrigation area, which I have taken to be 5,000 acres, I find that water can be supplied for less per acre than the Departmental estimate. In considering what men can pay, you have to take into account the price at which they will obtain their land, and the yield which they are likely to get from it. I have no reason to doubt that people could give as much as £5 per acre for land and water combined; but it is not necessary to charge that price. If the State undertook the work of supplying water, all that would be required in return would be a fair interest upon the outlay involved. All the land which would be benefited by the cheaper carriage resulting from the construction of the proposed works would be increased in rental at every

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periodic reappraisal, because the Land Act provides that the Land Board shall take into consideration the cost of carriage in determining the rental of Crown lands. As carriage goes up, rental comes down. With regard to the imposition of navigation tolls, I would point out that the rental for the Crown land would vary according to the tolls charged on the river. You can get a return from the proposed expenditure, either in the shape of increased rent or in tolls. If a man's rental is £150 a year, and his carriage costs him £50 per year, you ought to increase the rent to £125 a year if you reduce the carriage to £25 a year. There is a reappraisal every seven years. I see no objection, however, to the imposition of tolls. If we are to have any large amount of irrigation in this district, over and above isolated settlements such as that at Pera Bore, which may be eminently successful, the supply of water must come from other than artesian sources. The expenditure of £1,487 on the Pera Bore was to gain three objects: A supply of water for travelling stock; sufficient water for a Government experimental farm, and sufficient water for the settlement. Part of the cost should, therefore, be debited to the Travelling Stock Account, part against the Government Experimental Farm, and the rest against the settlement. With regard to evidence given by a witness yesterday as to the result of his attempts at irrigation, I would point out that the district in which he was living became depopulated, and it also had a very powerful rival in Mildura. He could not raise water as cheaply as they could raise it at Mildura with their more powerful machinery. Mildura, as a private venture of the Chaffey Bros., has come to grief; but I do not consider the settlement a failure. The pastoral industry just now is not very bright; but we do not consider it a failure, because many of those engaged in it are practically insolvent. The greatest benefit which would result from the carrying out of the proposed work would be the solution of the great problem, how to settle the Western Division. The ultimate benefit which will result if we can induce irrigation in this district will outweigh the benefit of cheap carriage although that is a very great benefit.

*To Mr. Lee:* I see no objection to the imposition of river tolls for the purpose of obtaining a return from the expenditure upon the proposed work, but in proportion as you levy tolls you will collect less rent from the people who send their produce along the river. To my mind it is immaterial whether you get your return by imposing tolls or by increasing rents. The rents here are fixed by a board of appraisers, after a consideration of the factors which determine the question. I contend that the State will be justified in collecting tolls as payment for services rendered; but, if it collects tolls, it will not give that cheaper carriage which the people here would otherwise have, and which would increase the rental value of the Crown lands. As to the danger of traffic being taken direct to South Australia on a river on which there are no tolls, our experience has been against that, the percentage of the total traffic going down the river past Bourke being very small, while traffic comes up the river to Bourke from places distant 120 and 130 miles by road. If there were no Government farm at Pera the Government would be put to less expense in connection with the management of the bore. One man would be more than sufficient to do all that was required there, and you would not be entitled to charge the whole expense incurred upon his account against the settlement, because his services would be required, even if there were no settlement, as caretaker of the bore and to regulate the supply of water to travelling stock. If the Government wished to economise they could make an arrangement with one of the settlers to look after the bore for perhaps £20 a year. The farm was established to encourage settlement and to induce people in the district to take an interest in cultivation. The land adjoining was thrown open for settlement on the 13th August last, when the Bourke summer was just commencing; but they got to work on the Government farm a little earlier. I am of opinion that so far the results have been encouraging, and the settlers seem to be of the same opinion. As the bore was put down to provide a public watering place, the country would have to pay interest on the outlay, whether there were a farm there or not. In my evidence I do not wish to convey the impression that there is a probability of a general decrease in the flow from the artesian wells, because I do not think for a moment that we have reached the limit of our artesian supply. My remarks were intended to counteract to some extent the belief that we can do wonderful things with these bores. If 15,000 acres were occupied and irrigated, the population of the district would be very largely increased, and the increase would follow on an expenditure altogether insignificant in comparison with the amount which is being expended in settling the present population on the land. I do not know of any part of the country where with irrigation a more certain return could be obtained from agricultural pursuits. Here a man is his own providence, by using his own watering can. We have at Pera a flooded-out Manning River man who believes that the conditions are more certain here than those which we had to face in the Eastern Division. No one can, in the absence of legislation, do the work of irrigation for themselves, and, with the river in its natural state, no one would attempt to do it on a large scale, when most water was required the supply would be at its lowest. If the Government erected pumping machinery, those in charge of a settlement would, when the first drought occurred, have to do what the Municipality of Bourke did in 1888, namely, put in a temporary dam below the point of intake. You must conserve the water before you proceed to carry out any irrigation scheme. It would not pay the individual settler to erect his own pumping plant, and in the absence of some controlling authority he can hardly co-operate with other settlers. I think that the Government should either give facilities which would enable private enterprise to step in, or do what is necessary to establish irrigation themselves. The isolated settler cannot, except in a small way, and in growing things for his own use, make a success of irrigation. I think that the Government would be justified in erecting a pumping station. With regard to the market that there would be if produce were raised, I would point out that our home market seems to be far ahead of any produce possible in the immediate future, and it is idle to discuss what the market will be 5 or 10 years hence. I take it that the market is here for all the produce that will be raised immediately, or within a reasonable period. With regard to the construction of the various locks and weirs, I think that whenever the river was in a favourable condition it would be better to proceed with the construction of all the locks and weirs simultaneously. It would be to lose a golden opportunity to construct one at a time. I see no reason why the locks and weirs should not be let out in pairs, the construction of them all to go on simultaneously. It seems almost opposed to common sense, if you make up your minds to carry out the work, to say that only one lock and weir shall be made at a time. Of course, if the engineers have doubts as to the effect of the construction of these works upon the river, caution will be the necessary policy to pursue. With regard to the construction of the proposed works, I think that it would be advisable, if the conditions were favourable, to seize the golden opportunity to push on with it without delay, lest a series of wet years should follow, when you could do nothing. If the engineers were to idle, a flood might come down and cause a long delay.

To

*To Mr. Wright :* In reply to the objection that it is now some years since the booming times of the country's prosperity, I would say that you cannot get the people out of one set of habits in a year or two. Those who are now living in the district are many of them in a very impoverished condition. A good deal has already been done in the way of irrigation and cultivation. I think that, in the interests of the district, the locking of the river would be better than the construction of a railway to Brewarrina. Besides, if you can concentrate traffic in one given channel, you can handle it more cheaply than if you distribute it over many channels. The Commissioners get a certain return now from the line to Bourke; but they would require a larger return to make a line to Brewarrina pay. It does not follow that the people on the Culgoa and Bokhara would be saddled with any additional carriage if they had to bring their produce by river to Bourke. Assuming that the Commissioners now charge £4 to carry wool from Bourke to Sydney, if they had to provide interest on a line to Brewarrina they might have to charge £4 10s. to carry wool from Brewarrina to Sydney. If, however, that wool could come down a permanently locked river, and pay only 7s. or 8s. a ton, the people sending it would effect a saving. Then, too, as you reduce the risk on the river, the insurance rates will fall. Produce has been taken to Brewarrina for 12s. 6d., and, with a better class of boat, the rates would come down to 7s. With regard to the £70,000 worth of produce, which I said was imported into this district by the railways, I may say that I obtained from the Secretary to the Railway Commissioners, figures as to the quantity of produce imported, and then made the calculation myself. After the river is locked, one of two things might be done: The State might provide pumping machinery to lift the water on to the land, or private enterprise might be allowed to come in. Unless the State or the capitalist steps in, irrigation can go on only upon a very small scale. Except in a few isolated cases, it would be impossible for the individual irrigationist to provide for his own requirements. In reply to the question whether people would come from more settled parts of the colony, where there is a better rainfall, and where the heat is not so extreme as it is here, I would point out that the graziers came here, although they could have got estates nearer the coast, and I dare say other people will follow their example. The first thing we have to do is to feed the population living in the district. No sane man has any idea of settling the whole of the Western Division under irrigation; but the question arises whether you have not certain portions of land here which would carry a population of irrigationists. I think that the district might very well supply itself with vegetables and fruits, and have a good deal to export as well. If the American can afford to ship his produce to London, and then out here, I am prepared to believe that, with our cheaper land, with the exceptional advantages which the Government can offer, and with the enterprise of our people, we can compete with them. Although the American producers have 60,000,000 people to feed, while we have only 1,250,000, the proportion of the producers to the consumers is about the same in each place. Whether you have protection or not, the producers of this country must, sooner or later, face the producers of other countries in outside markets. Our wool producers and our stock producers have already done so, and our farmers will have to follow their example. In starting irrigation here, we should have first the home market to supply, and I think that if the Americans find it profitable to send their products here, we ought to be able to find a living in supplying our own people. In other places the people have to pay much more for their land than we should have to pay here. At Wellington you have to pay £5 an acre for land, and you have no water supply. You take off that land 10 or 12 bushels of wheat to the acre, and this wheat is worth 2s. 6d. a bushel. At Mildura you pay £20 an acre for the land. Notwithstanding that, however, Mildura will be the success so soon as the men who have paid too much for their land get out of their difficulties, or are succeeded by people with more capital. It is possible to get figures to show that the gravitation schemes in California cost more than it would cost to pump the water from the Darling. The cost involved in creating a work has to be considered as well as the annual cost of maintenance. In California people can carry on irrigation successfully at four times what the work would cost here, and I think that our people will do at least equally well under much more favourable conditions. As I have already said, it seems to me immaterial how the Crown collects revenue to pay for this work--whether it imposes tolls, or increases the rent of Crown lands. The Land Board would only increase the rentals of Crown lands in the district to the extent to which it is proved that they were benefited by the scheme. Crown lands are appraised every seven years. Most of the holdings are being appraised now, though some of them will not be appraised for one or two years. I think that the whole work should be constructed at once, and that advantage should be taken of a low river to push on with it. I think that there is hope of successful settlement in this district without any spoon-feeding by the Crown. I do not believe in spoon-feeding, because I am of opinion that, given the necessary conditions, the people may be left to work out their own salvation. I attach considerable importance to the Pera Bore Settlement as an object lesson, because, if it turns out a success, it will induce other people to enter upon similar occupation. I do not see that there need be any antagonism between the small people and the large people; but there is land in this district which could be settled without disturbing the large pastoralists in any way. The land upon which water could not be used might be left as it is. It would be better for all parties if there were less earth hunger, and the land were used more.

*To Mr. Black :* The artesian bores were put down for public purposes, to provide water on the stock routes. That is considered to be a public purpose, much as the making of a road, or the constructing of a bridge is considered as such. I approve of the efforts of the Government to open up back country roads. I am not aware, however, that the Government ever put down a bore for the purpose of establishing a settlement. It was only an afterthought; but it is a further reason for approving of the putting down of artesian bores. I would approve of the Government purchasing pumping plant, to be used by settlements of irrigationists on much the same principle as the Government now carries out the supply of water to country towns. That the repayment of money expended in that way is to some extent problematical is the fault of the Government in not insisting upon prompt payments. With regard to homestead leases, the tendency has been for them to be acquired by a few men. The management of five, six, or even ten homestead leases costs very little more than the management of one or two, if there are ten homestead lessees, nine of whom fail while the other is successful, he is probably able to acquire their properties at less than their value. Not one out of every ten homestead lessees has established himself and made a comfortable home.

*To the Chairman.]* I favour the erection of pumping machinery by the Government, the cost to be repaid by a charge made on the land irrigated. I admit that the area of land which will be irrigable upon the completion of the Bourke weir will be sufficient for experimental purposes, at least for the present; but

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I would point out that there are people further up the river who might desire to do something in the way of irrigation. Knowing the Brewarrina district, I think that the people there are entitled to an easy road to market. I think that improved river navigation is the best thing you can do for them. I do not share the opinion of Mr. MacFarlane that neither the locking of the river nor the construction of a railway is necessary at the present time. The opinion has been expressed that a permanent weir would silt up. Although, for reasons I have given, I think that the construction of permanent weirs in the Darling would be a mistake, there need be no fear of silting up in this river. The soil held in solution is such a fine vegetable deposit that, wherever the water strikes against an obstruction, not only is no silt deposited, but a big hollow is made in the bed on the up side. This I am told does not occur in any other river. The proposal to construct fixed weirs is made by gentlemen who have not sufficiently regarded the character of the river.

FRIDAY, 26 JUNE, 1896.

[The Sectional Committee met at the residence of Mr. George Woods, Yambacuna, at 12:35 p.m.]

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (CHAIRMAN).		15
The Hon. WILLIAM JOSEPH TRICKETT. CHARLES ALFRED LEE, Esq.		THOMAS HENRY HASSALL, Esq. GEORGE BLACK, Esq.
FRANCIS AUGUSTUS WRIGHT, Esq.		

The Sectional Committee further considered the proposed Construction of Locks and Weirs on the River Darling. 20

Mr. George Woods, homestead lessee, Yambacuna, sworn, and examined:—

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To Mr. Trickett: I am a sheep farmer and irrigationist, and a soap manufacturer. My homestead lease is situated on the south bank of the Darling, and on the main road from Bourke to Brewarrina. It is 44 miles from Bourke and 16 miles from Brewarrina. Fronting my property is a lagoon having a circumference of about 2 miles. In the year 1887 I made a dam to impound the water in this lagoon, and prevent it running back into the river. 25

To Mr. Hassall: When full, the lagoon contains about 20 feet of water. There are about 14 feet of water in it now.

To Mr. Trickett: Besides the homestead lease I have a special lease for which I pay £10 a year. It comprises about 70 acres of land surrounded by water. I have been here ten years. I took up the land with another man. We paid £150 for the improvements that were on it, though they consisted only of fences. Since then I have improved the property by putting up a residence, a pumping engine of 8-horse power, a windmill, a granary, a soap manufactory, and a wool-shed, and have divided it into ten paddocks with wire fences. There are over 30 miles of fencing on the property. Since the last appraisalment I have been paying 3d. an acre for the land. I would be willing to pay even more for the land if I could irrigate. I could pay 5s. an acre for the land that I irrigate; but, taking the whole holding, I think the rent is too high. I have appealed against the appraisalment, but the appeal has not been decided yet. There are two homestead selections here, comprising 20,000 acres. The soil is all black soil, and about one-third of it is covered with Coolabah scrub. It is all good grazing land, and, if you could irrigate it, it would be good agricultural land. We have ring-barked 2,000 acres, and I have about 120 acres cleared. There is lignum scattered throughout the country, but even where it grows is good country for grazing purposes. At the present time we have 8,000 sheep, but we could not carry anything like that quantity last year. Last year we could not carry 2,000 sheep, and we had to feed them on scrub. We have had four dry seasons since 1891, and last year was exceptionally dry. The average carrying capacity of the run is about 4,000 sheep, or one sheep to 5 acres. I started to irrigate here in 1888. When the natural rainfall is not sufficient we irrigate 40 acres round the homestead, but this year I increased the area to 70 acres. Last year, when we had no rain, I grew 40 acres of wheat, and irrigated it at a cost of 10s. per acre. We got a very good crop of hay. A great deal of the wheat was fed down by the stock, but the rest of it I made into hay. By feeding the animals we lost no stock at all last year, but I boiled down a number. The heavy rain that fell killed most of the stock that died, but all the stock would have died if I had not fed them. This time last year I was cutting green barley for milking cows, and for my horses and rams. I kept all these animals alive in that way, and a number of paddock sheep as well, though I could not say how many. That 40-acre block fed an enormous number of stock. My surplus sheep I sent away to another property on the Queensland border, and when I brought them back I boiled down what I could not keep alive. Of course if you boil down your sheep you do not get as good a return from them as if you sent them away as fat sheep. If I had a larger pumping plant and more water I could keep all the sheep I have on the place alive. About a mile further down there is a big lagoon, and if I could get water into it I could irrigate thousands of acres, and feed not only my own stock, but a lot more. I could keep ten sheep to the acre on irrigated natural grass, and with the produce of cultivated land. It would not pay only to irrigate the natural grass. If I could irrigate this area that I speak of I would grow wheat and other crops upon it. Johnson grass will keep ten sheep to the acre. The expense of irrigation would not be very much. The ploughing and harrowing could be done for about 5s. an acre; and the sowing, if I sowed wheat, would cost another 5s. an acre. I could feed ten, and perhaps twelve sheep to the acre on wheat. 40

To Mr. Wright: I could feed that number of sheep for five or six months in the year, though the experiment has not been tried in the district. 65

To Mr. Trickett: A number of people chance the seasons. It pays them to cultivate if they only get a crop every second year. In 1886, 1887, and 1889, I grew splendid crops without any irrigation. There were three good seasons in the first five years that I spent here. It would be very expensive to carry water far back from the river. If we could tap artesian water, I reckon that it would pay to feed stock in dry times. The cowl to which I have referred goes back from the Darling until it joins the Bogan, so that, if you could keep water in it, you could irrigate the country for miles. If the water were within 20 feet 70

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feet of the surface, when raised to that level by pumping, you could carry it back 3 or 4 miles by using fluming. At the present time the prices of wool and of fat stock are very low. Last year the Colony lost 10,000,000 sheep. Of course, if your stock are valuable you can feed them, but if they are not valuable it is better to put them into the pot. I have not gone into figures to ascertain what it would cost to feed 5 a sheep all the year round on irrigated land; but I think it would not be more than 1s. 6d. a head. I reckon that it would pay me to give 6d. or 1s. an acre for water to improve my paddocks. If you have the water within 30 feet of the surface, you can work a centrifugal pump. When you cannot work a centrifugal pump the expense is greater. I would be willing to pay 6d. an acre for water if I could get it within 20 feet of the surface. If the water were pumped for me to a distributing level, I could pay 5s. an acre.

10 Of course, if you blocked the river too much there would be a danger of creating large floods which would injure the country. We sometimes get too much water now, and at times when we do not want it. It would pay best to grow fruit and produce and sugar-cane on irrigated land. We can grow sugar-cane and wheat here, and dairying could be carried on for six or eight months in the year. I think we could find a market in Sydney for our produce; but it would be a question of rents *versus* carriage. The rents being 15 reasonable, I believe that dairying would pay here. No doubt the land in the district would be worth more if the Government conserved water and raised it to a distributing height. If I had the means I would irrigate a couple of thousand acres, perhaps more. I believe that irrigation would pay better than anything else. The first cost of my windmill—and I erected it myself—was £50. It cost £28 less in Sydney. The steam-engine and pump together cost £150, and the shed cost another £50, including the piping. The engine 20 I bought second-hand very cheaply. That plant will irrigate 2 acres a day, or 3 acres if the ground is not very dry. The windmill only irrigates the garden, and supplies water for domestic purposes. For a crop of wheaten hay two drenchings are sufficient—one in April and the other in August. This cost 10s. an acre for labour and firewood and the work of distribution. My irrigation cost me £1 an acre per crop of hay. A great deal of my hay was fed down by the stock, but one patch, which was not very good, 25 went about 2 tons to the acre. If I had a choice I would not keep sheep at all; I would go in for irrigation. In that way I think I could make more money out of 300 acres than I do now out of 20,000 acres. I would grow chaff, and I would go in for butter, eggs, pigs, and produce of that kind. I think there is room for a number of people to engage in that industry here. I consider that if I could go in for irrigation I would be working on sure lines. Under present conditions you get a good year and make a lot of 30 money, and then you get a bad year and lose it. Before I came here I was living in the Inverell district. They have a better rainfall and better land there; but they have no railway communication. I got disgusted with the district, and I thought I would try fresh fields. When we came here first we did very well, because stock commanded a good price. At the present time, however, unless a person has good sheep, and works very economically, he loses, because of the dry seasons. It is not a paying concern if 35 you borrow money. Here I only employ one man besides the members of my own family; that is except at shearing time. If it were not for my soap manufactory, my wool-scouring, and so on, I could not make a living at all. If the river were permanently navigable I could save £40 a year in the cost of transit. At the present time we pay 10s. a ton when the river is navigable, and then there is the insurance. The lowest price I ever paid for land-carriage to Bourke was 30s. a ton.

40 *To Mr. Wright:* I pay 10s. a ton from river bank to river bank, and then there is 2s. 6d. or 5s. a ton to be paid at Bourke. For road-carriage, I have paid as much as £3 a ton, and on the river I have paid as much as £1 a ton. In wet weather the teams sometimes take weeks to get over the country. If the river were permanently navigable, I would be willing to pay anything up to 5s. a ton for tonnage dues, because I reckon that with certain navigation we could get freight for about 5s. a ton.

45 *To Mr. Lee:* If water were conserved above Beemery, we should be able to erect a larger pumping-plant, and to irrigate more land. The lagoon in front of my place was dry when I came here. Of course, if the river were conserved, irrigation would be a certainty, and I could take water from the river as well as from the lagoon. The river level would have to be raised to within 20 feet of the top of the banks. If the proposed works only raised the river level about 6 feet they would be no advantage from an irrigation 50 point of view. I can irrigate about 100 acres from the lagoon. I could irrigate from the river, but it would cost more. During the ten years I have been here I have only twice seen the Darling so low that you could cross it. That was in 1885-6 and in 1888. I think that 15,000 acres of land suitable for irrigation, and near to the river banks, could easily be obtained between here and Bourke, especially if they took in the dry Bogan. The dry Bogan enters the Darling about 6 miles above Bourke, and if it 55 were blocked, you could irrigate a large area of land. If the river level were increased only 7 feet, I do not know that any land could be irrigated between here and Bourke, except at great expense. If the Government supplied land and water for 5s. an acre, I would sooner be a settler in an irrigation settlement than engaged in any other industry. I do not see, however, that there is any need to cut a man down to 20 acres. A man would require 200 acres. In such a settlement the people would be able to 60 raise chaff, butter, and other produce, to supply the Bourke market. Fruit should pay better than anything else—apricots, peaches, and other things, all of which grow very well along the Darling. I do not think that people would leave a district like the Inverell district to come to this district; but there are a number of people already here who are not doing anything, and who might be employed. There is a market in England for most of the things that we could produce—for butter, fruit, poultry, bacon, and 65 preserved meat. The prices are low; but I do not know that that market is unremunerative. In considering the competition of the Hunter and South Coast districts, you must remember that the rents there are much higher than the rents here. Land at Bodalla costs £40 an acre; but I cannot see how they can make dairying pay on such land. I think the conservation of water in this district would lead to a lot of settlement. We want different people from those who are here now. The men who own stations here 70 are not very much in favour of irrigation. Station managers have told me that sooner than feed their stock by means of irrigation they would cut their throats. If I had the means, I would sooner go in for irrigation here than do anything else. I like the place, the climate is splendid in the winter-time, and you would be surprised at the variety of products that can be grown here. All animals do well here. So far we have not been very successful; but then we have a very small area under cultivation. If we could 75 extend our irrigation area the place would pay a lot better; 40 acres are not enough to have under irrigation. It is cheaper to pay 10s. an acre to irrigate land than to pay the rents which are charged on the coast; and this land is quite as good as the coast land. I think that if you had everything on business lines, you could grow sufficient produce to feed your sheep, and you could make it pay.

To

Mr.  
G. Woods.  
26 June, 1896.

*To Mr. Wright:* The proposed increase of the water level in the Darling to 6 feet would be of no advantage to me for irrigation purposes. The only chance I should have would be when the flood-waters filled the billabongs. I do not think that the estimate of the engineer, that the Government would get 5s. an acre for the water used on cultivated land and 1s. and 6d. an acre for water used on grass land will be realised. The river level has very often been within 20 feet of the surface; but there has not been much irrigation. The only advantages I can see to be obtained from the work will be cheaper water-carriage. As far as the benefit of having water for the stock is concerned, I would point out that the river has never yet been completely dry. There has always been enough water in it for the stock. I would sooner have the river locked than see a railway constructed to Brewarrina. If such a railway were constructed the river would compete with it very seriously in good times. A lot of wool goes by river now to Melbourne and Adelaide. If the river were locked, I do not know that more wool would be sent out of the Colony than goes out now, because the breaks in the navigation would render it easier to stop at Bourke. As far as irrigation is concerned, I would sooner see the dry Bogan dammed. If the Government cut up 3,000 acres of the land at North Bourke into suitably-sized farms, and supplied water at 5s. an acre, I think the land would be taken up. It would not be very expensive to dam the dry Bogan, and such a work would enable a large area of land to be irrigated. The banks of the dry Bogan are lower than the banks of the Darling. If people could get water with a 10 or 12 feet lift, I think that irrigation would be carried on extensively.

*To Mr. Hassall:* The only advantage that I would get from the locking of the river would be cheaper freight. That advantage would be equal to about a half-penny per acre, distributed over the holding. In my opinion, irrigation with artesian water will be found much cheaper than irrigation with river water, and will enable us to compete with places nearer Sydney.

*To Mr. Black:* Pretty well all the land along the river bank is of the same character as my land; but a lot of it is subject to floods. Such land would be unsuitable for irrigation. Very nearly half the land is beyond the reach of flood, except such floods as that of 1890. To make it possible to irrigate from the river cheaply the water level would have to be raised 25 or 30 feet. A group of irrigationists, if they obtained a suitable position, might work an expensive pumping-plant as a joint concern, and thus raise water at a reasonable cost. The more the plant was kept in use the less the proportionate cost of pumping. Nearly all sorts of fruit grow well with me. We have apricots, peaches, and nectarines, but they want a good deal of draining. Grapes do very well, and do not require very much drainage. Quinces do well, and figs do remarkably well. Grapes ripen here very early. I have had ripe grapes at Christmas. I have not many peaches, but some of them ripen very early. Apricots ripen quickly. We have ripe apricots at the end of November. I do not think that 20 acres is sufficient for one man to support himself on, unless he uses it as a market garden. Twenty acres of fruit would give a splendid living, and that area would be sufficient for poultry farming, but it would not do for dairying, and scarcely for pig-farming. If the Government laid the water on to the land the people in this district could pay 5s. an acre for it.

*To the Chairman:* We have grown lucerne in this district. We had 6 acres under lucerne, but the native grasses overpowered it. It can be irrigated six times a year, at a cost of about 5s. an acre for each drenching. It takes about 6 inches of water to saturate the ground properly; that is, about 125,000 gallons. The ground in which we grew the lucerne was not too suitable for it. It wants a sandy soil. There is such land near the river, but the expense of clearing is very heavy. The land which we had under lucerne has a clayey subsoil. I think you could keep from ten to fifteen sheep on an acre of lucerne all the year round. 1,000 acres of irrigated land would keep 12,000 sheep, and you would require about 2,000 acres more on which to run the sheep.

*To Mr. Wright:* I would take the sheep from one paddock to another. I would not feed the lucerne down too closely.

*To the Chairman:* I would have the paddocks subdivided, and always spell some of them. If you could do that on a large scale you would make sheep-farming more of a certainty than it is now. I think that there is quite sufficient land within 25 miles of Bourke to supply the local market if irrigation is adopted, but I am not sure that the construction of the Bourke weir will conserve the water at a sufficiently high level to induce people to pump it. I am satisfied that there would be no difficulty in irrigating a very much larger area than that estimated by the engineer, if the river were properly locked. At the same time a great deal of that land is subject to floods, and there would be a danger of losing the crop. When the Darling is up it covers all the lignum swamps. About half the land from here to Bourke is above flood level, and suitable for irrigation.

SATURDAY, 27 JUNE, 1896.

[The Sectional Committee met at the Court-house, Brewarrina, at 10 a.m.]

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (CHAIRMAN).		
THE HON. WILLIAM JOSEPH TRICKETT.	THOMAS HENRY HASSALL, Esq.	60
CHARLES ALFRED LEE, Esq.	GEORGE BLACK, Esq.	
FRANCIS AUGUSTUS WRIGHT, Esq.		

The Sectional Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Mr. Henry Loraine Cathie, stock and station agent, Brewarrina, sworn, and examined:— 65

Mr.  
H. L. Cathie.  
27 June, 1896.

*To Mr. Lee:* I have been here eleven years and have a pretty general knowledge of the district, and of the trend of the traffic in the district. All the traffic from the north of Brewarrina as far as the Queensland border, and north and east of the Culgoa River, and from the other side of that river comes to Brewarrina and goes from Brewarrina to either Bourke or Byrock. That includes stock traffic as well as produce. All the traffic from a large area of very excellent squatting country comes here. The extension of the railway to Moree will not affect the country which I describe. The traffic will still come to Brewarrina. Neither would that country be affected by the construction of a railway to Walgett. A line taken

taken by way of Warren to Walgett would also be too far east. Probably some of the traffic which now comes from the north-east might drift to Walgett, if a railway were made to that place; but none of the traffic from the north and north-west would go there. When traffic reaches Brewarrina, its ultimate destination is determined by the state of the roads and the amount of feed to be had. If there is anything like a flood in the river, it is almost impossible for teams to travel to Bourke, and then stuff goes to Byrock. There is only a difference of about 5 miles in the distance between the two places. I think that the road to Byrock is in a better state than the Bourke road; but there is more feed and water on the Bourke road. Occasionally wool and other station produce is shipped from here to Bourke by steamer. In the year before last, and for two or three years back, the bulk of the wool went from here by steamer to Bourke. I suppose in 1892-3-4 30,000 or 40,000 bales per year were loaded at Brewarrina and taken by river to Bourke, and the river was almost continuously navigable for nearly four years. There was a good river from 1890 up to last year. The rate of carriage from here to Bourke by road has varied considerably during the last few years. At one time, when the Carriers' Union was in existence, the rate was a great deal higher than it is now. At the present time they are bringing loading from Byrock for £1 a ton, and stuff can be got from Bourke for 30s. a ton. They take the wool down in a good season by steamer for £1 a ton; but there is an extra charge for putting it on the railway trucks at Bourke. Under present conditions the difference between the road rates and the river rates, even if the river were made permanently navigable, would be very slight. As far as the road traffic is concerned, I do not think that it would pay to take stuff at less than £1 a ton, and it is questionable if it pays at that. Of course, with permanent water and certainty of transit, it is likely that the river rates would be reduced. The smallest settlement that we have in this district is by homestead lessees. They each hold 10,240 acres. It is very questionable whether, taking them generally, they have been successful. I do not think that the country on this river is suitable for any large scheme of irrigation. To my mind it is very doubtful if areas of sufficient size and suitable for irrigation could be obtained near the river; I mean country beyond flood-level. The only farms that I know of, which have been successfully worked in the district, are the Chinese gardens near Brewarrina. The soil between here and Bourke is principally black soil; there is very little red soil. Most of the country is under water in times of anything like a high flood. In many places you cannot get near the river for miles, and there are only a few high points which are above the water. If irrigation were attempted, sites would have to be selected which are above flood-level; otherwise the waters would destroy the cultivation. In times of high flood there is a great deal more than a foot of water over most of the country near the river banks; and in 1890 the flood-water stood at its highest for at least a fortnight. Such floods would destroy irrigated farms. If flood-water went over Incerne and remained on it for a day or two, it would not destroy it; but if it remained on it for a week or two it would destroy it. In 1890 there was from 18 inches to 2 feet of water over the Chinese garden here. That water remained there for from ten days to a fortnight, and killed all the stone-fruit in the garden. We had to replant the garden after the flood. The orange trees and the older vines lived. Every two or three years we have what you might call a high river. The flood of 1886 was a high flood; but the flood of 1890 was one of the highest known. In my opinion, the flood of 1886 would have destroyed all the irrigation in the district, except in a few favoured spots, and the flood of 1890 would have done the same thing. Floods of that character spread over the whole of the low country between here and the Bogan. Of the locking of the Darling and the construction of a railway to Brewarrina, I should prefer the latter. I think that the proposal to lock the Darling is very much before its time, and for more reasons than one. If irrigation farms could be successfully worked on the Darling, where would the farmers get a market for their produce. At the present time we can land farm produce in Brewarrina—that is, horse feed and everything of that kind—much more cheaply than it could be grown here by irrigation. Butter has sometimes been made here in the winter-time; but it has never paid people to sell it for less than 1s. 3d. per lb., although we can get it more cheaply than that from Orange. It is hard to say how the country would progress under a system of water conservation; but I think it will be time enough fifty years hence to lock the Darling. The question with me is, can irrigation be successfully followed on the Darling unless water is taken some distance back from the river? I doubt if any large area of land can be obtained close to the river which is not subject to floods. You might get a point on the river which was not under water during the flood of 1890, but it would not contain more than 20 acres. I do not think that anything like 15,000 acres of land suitable for irrigation could be found close to the river between here and Bourke.

*To Mr. Wright:* It is rather difficult to say what proportion of the wool clip going from Bourke to Sydney by rail passes through Brewarrina. Last year the clip was considerably lighter than it was the two previous years. The quantity shipped through Brewarrina to Bourke previous to last year was a little over 30,000 bales. The wool going to Bourke comes from the district about Brewarrina and north of it. The country about Bourke and to the west has not been very satisfactory for wool-growing during the last two years. The cost of sending greasy wool from Brewarrina to Bourke by river, including handling at Bourke and insurance, would be 26s. or 27s. a ton. I never heard of wool being taken from wharf to wharf on the river for less than £1 a ton. If a railway were constructed from Byrock to Brewarrina, this would be a very large trucking station. I consider Brewarrina one of the best pastoral districts in the Western Division. An extension of the railway to Walgett would not affect the country to the north or to the north-west in the slightest. I do not think that anybody would care to pay 5s. an acre for the right to pump water from the river, nor do I think that the Crown lessees would like to have their rents increased because of the benefits to be derived from the locking of the river. The cultivation of a very small area would supply all local wants, an area of from 400 to 500 acres would be quite sufficient. The Railway Commissioners would have to carry any surplus produce for nothing to enable producers to find markets elsewhere. It is all black soil from here to the Bogan, and then red-soil country to Byrock. There would be no engineering difficulties in the way of constructing a railway, and only two bridges would be required. The distance from Brewarrina to Byrock is 60 miles, and from Byrock to Sydney about 450 miles. I think that a railway from Byrock to Brewarrina would pay expenses within the next twenty years. Of course, it is argued that the railways already get all the produce that comes from this district. That is very true; but no railway could be made in the Western Division which would have better prospects of paying. At the present prices of construction I think it would be only a very short time before such a line would begin to pay. The only low country through which the line would pass is that between the Tarrion Creek and the Bogan River; but I do not suppose that the water

Mr.  
H. L. Cathie.  
27 June, 1896.

was more than 2 feet deep over the whole of that country during the big flood. I do not consider that a railway if constructed would prove a danger to the town by damming back the flood-waters, because plenty of getaways could be constructed, and the town is built upon high land. I think that the country higher up the river is similar to the country here. The people of Brewarrina and of the district generally are nearly all opposed to the locking of the river. Speaking for myself, I think that it would be a waste of money to lock the Darling at the present time, and no doubt that is the feeling of the district. 5

*To Mr. Hassall:* Brewarrina is the depot for the pastoral properties lying to the north and north-west, embracing the country on the Bokhara, Birree, Narran, and Culgoa Rivers. The wool clips from that country all gravitate to Brewarrina. When there is a river they go from here by steamer to Bourke; when there is no river they go either to Bourke or to Byrock. The Commissioners make no difference in the railway charges between Girilambone and Bourke. With regard to merchandise coming this way, the bulk of it comes from Bourke. The bulk of the merchandise is handled at Bourke by Messrs. E. Rich & Company. The locking of the river would be the means of throwing the whole of the trade into the hands of one firm. Messrs. E. Rich & Company are the only persons who have a fleet of boats on the river now. No doubt the locking of the river would lead to monopoly. I do not know of any patches of red country near the river similar to that at North Bourke. The main road from Bourke to Brewarrina keeps near to the river most of the way, though in places it is 3 or 4 miles from the river. In bad weather, when the floods block the Bourke road, people travel up the south side of the Bogan from Bourke, and then come across here on higher country. That makes a difference of 10 or 15 miles in the distance, but the surveyed road from here to Bourke cannot be travelled in flood-time. With regard to the road to Byrock, it is very rarely that the coaches are unable to get through with the mails; but in 1890 you could take a boat from here to the Bogau, a distance of 25 miles. When you get to the red-soil country you are on dry land all the way to Byrock. The raising of the river-level 10 ft. might save a little in the cost of pumping; but the saving would be very small. If you wished to irrigate a piece of land which was above ordinary flood-level you would probably have to lift the water 35 ft. if the river was low. I am just about to erect a pump myself, and I know that it will take 35 ft. to lift the water to the top of the bank. The river at the present time is 30 or 40 ft. below its banks, and if the water were only raised 10 ft. I cannot see that that would offer a great inducement to settlement. 10 15 20 25

*To Mr. Trickett:* Brewarrina is a great traffic centre. The proposal before the Committee would make Bourke the great centre. At the present time when the river is navigable all the wool goes by steamer to Bourke. The insurance on wool sent by river would come to about 6s. per cent. Of course the cost is made very low by insuring the wool straight from the sheep's back. When the road is fairly good the rate for taking wool from here to Byrock is about £2 a ton. It might occasionally be taken for less than that, but that would be a fair average price to allow. As far as water for pastoral purposes is concerned, I think that there is enough in the river now for all pastoral purposes. I do not think that water is likely to be used for flooding pastoral lands. If it were used in that way it would be likely to do more harm than good. If a series of weirs were constructed below Bourke the trade of this Colony would probably drift to South Australia. 30 35

*To the Chairman:* I never heard of traffic on the river being taken for less than £1 a ton. If the rate had ever been 12s. 6d. a ton I should have known of it. With regard to the probable earnings of a railway to Brewarrina, I would point out that although the rate might be the same from Brewarrina as it is from Bourke, that would only be for wool going down. I do not think that other merchandise would be carried at the same rate. If the railway were constructed to Brewarrina a great deal of the traffic that now goes to Narrabri would come to Brewarrina. That would give the Commissioners the advantage of 100 miles of additional haulage. There might not be much advantage in that so far as wool is concerned, because the rate is the same from Girilambone as from Bourke, but there would be additional earnings for other merchandise. If the Brewarrina line secured part of the wool that now goes to Narrabri, it is only reasonable to suppose that back loading which now goes to Narrabri would come here. I consider that if a railway were made to Brewarrina, and there were no railway to Walgett, we should get the traffic from within 30 miles of Walgett and up from beyond the Queensland border. I consider that if the railway were brought to Brewarrina this would be the largest trucking station on the Western line, and it would catch all the Queensland traffic. At the present time, a station 40 miles up the river, having fat stock to dispose of, would probably drive them to Noverthire or to Dubbo; but if there were a railway at Brewarrina they would come here. In that way the Commissioners would earn more. Of course, when the river is navigable there is no team traffic; but during the five years that the river was navigable there was no substantial reduction in the cost of transit between Bourke and Brewarrina. As to what I said about one firm enjoying the monopoly, of course there would be nothing to prevent anyone from putting steamers on to the river if they had the money to do it. 40 45 50 55

Mr. Walter George Jamson, stock and station agent, Brewarrina, sworn, and examined:—

Mr. W. G.  
Jamson.  
7 June, 1896.

*To the Chairman:* I have resided for two years in Brewarrina, and I have lived eleven years in the district. *To Mr. Wright:* Before I came to Brewarrina I was on the Culgoa. I know the Culgoa and the Birree country. The country to the east of the Culgoa is very good; the country on the west is inferior. A good deal of the traffic from that district goes to Byrock through Brewarrina; a small part of it goes to Bourke. I do not think that irrigation would be assisted very much if the river-level were permanently raised 6 feet. The land on the banks of the river is most unsuitable for agriculture, because, to a great extent, it is low-lying and subject to inundation. Back from the river there are patches of high land. The soil within a reasonable distance of the river is mostly black soil. There is not very much loose open soil. I do not think that the country is suitable for irrigation, even if a sufficient area could be obtained above flood-level. I do not think that Mr. Woods has made a success of his irrigation. A railway to Byrock would be of much greater benefit to the district than the locking of the river. Of course the railways get the traffic now, but they do not get paid anything more for it. If there were a railway to Brewarrina, I think they could charge a special rate. I think that the people would be only too glad to pay 15s. a ton more for the carriage of their wool if they could send it direct from Brewarrina, and I should think that would be sufficient to pay interest on the cost of the line. I have had some experience of irrigation upon a station. There was a large bore there in connection with which they started an irrigation farm. I was in charge of the farm for about six months. They grew enough produce, though at 60 65 70 75

Mr. W. G.  
Jameson.

27 June, 1896.

at a pretty heavy cost, to feed their horses in a dry season. Lucerne and wheat were grown. The only expense besides that incurred in cultivating was for making drains. I do not think that many people would pay 5s. an acre for the privilege of pumping water from the river, nor do I think that Crown lessees would pay 6d. or 1s. an acre to pump water for flooding their grass land. I do not think that many people  
5 would go in for growing lucerne on the banks of the river if they could get water, because they would not be able to dispose of it after they had grown it. There would be no outlet for produce when grown. I should think 200 or 300 acres would grow sufficient produce to supply the whole district. At times there is a large consumption of chaff in this district. That happens when there is a very dry season. Some of the stations grow their own hay; but only to a small extent. They cultivate from 10 to 15 acres. The  
10 demand for chaff is not so great now as it was five or six years ago, because many of the pastoral holders grow their own hay.

*To Mr. Black:* I do not think that the river would compete for the traffic with the line from Brewarrina, because I do not think that carriage by river could ever be less than £1 a ton, while if you could send  
15 for 5s. a ton, it would go that way; but how then could the locks be maintained. The rate of carriage by steamer at present varies from £1 to 25s. Carriage by rail direct would be cheaper than carriage by steamer and then carriage by rail.

*To Mr. Hassall:* The country about Brewarrina is much superior to the country further south, so far as I know it. The number of sheep in the district at the end of last year was 11,354,082; the area of the  
20 district is 32,915,112 acres; the number of cattle in the district was 11,148; and of horses 4,814. The principal stations lie north, north-west, and north-east of Brewarrina; Brewarrina is the natural depot for those stations, and the stock routes all trend this way. Stock would truck at Brewarrina by preference; the roads to Brewarrina from the north-west and north-east are better than the roads to Bourke. People even come from Barrington through Brewarrina in preference to going to Bourke, because of the better  
25 state of the roads. They go on from here to Byrock. I do not think the locking of the river would make any difference in the destination of the cattle now coming here. With regard to the railway rates, they are the same for Byrock as for Bourke; but a difference is made in the rates for back carriage. I do not think that the locking of the Darling would be of any great benefit to this district. A very large part of the traffic of the railway from Brewarrina to Byrock would be with  
30 live stock. The locking of the river would not affect that traffic. If we had a railway here Brewarrina would be one of the largest trucking depôts in the Western division. We have a large common, and a great extent of good country all round. A great number of people come in here for their supplies. There are several stations on the Queensland border and in Queensland, such as Yerambah, Currawillinghai, and Woolerina, which at present send their wool either to Narrabri or to Charleville, but which  
35 would send their wool to Brewarrina if the railway came here. It is about 150 miles from Brewarrina to Currawillinghai, and about 250 miles from Narrabri to the same place. I think they go through Walgett. If a railway were constructed to Brewarrina, I think that that traffic would come here, because there would be a slight saving in the carriage. A good deal of wool comes here when the river is full. In one year the cattle crossing here numbered 78,000, out of about 90,000 which passed Barrington, a place  
40 which is supposed to be on the Bourke road. Cattle come here by preference, because the road is better than the road to Bourke. I have affidavits, which the Committee can read, which speak as to the extent of the flooded country between here and the Bogan. It was asserted that the floods would seriously interfere with the construction of a railway over that country, and these affidavits were made by people residing in the district to repel that assertion. The affidavits were made by Mr. Collis,  
45 and by Mr. Lindsay who was living at Charlton, on the Bogan. I am pretty well acquainted with the country round here. I hardly think the soil between here and Bourke suitable for irrigation. If water were conserved in the river, I do not think that people cultivating along the banks would be able to find a market for their produce. The local market is at present supplied from Bathurst and Orange. We have had oats and wheaten chaff landed here in times of drought for £5 5s. a ton. I do  
50 not think it could be grown for less than that in the district, and it would possibly cost more. On the station where I was it would cost a good deal more than that to grow produce, taking into consideration the outlay involved in constructing drains and in clearing the land. It is only about one year in every five that any produce is required in this district. It is only in exceptional years that anything is imported, except perhaps a few tons of chaff for racehorses, or something of that kind. I do not think that it is  
55 likely that 15,000 acres would be irrigated between here and Bourke, if the proposed scheme were carried out. The locking of the Darling would not be of the slightest benefit to Brewarrina, and I do not believe that it would be any benefit to Bourke.

*To Mr. Trickett:* When the river is navigable it is always used in preference to the road, either to Bourke or to Byrock, and I do not see that the carriage of goods by steamer would benefit the Government at all.  
60 I do not think that the State would get much in the shape of license fees for the right to pump water. As for the increase in the value of land, most of the lessees are grumbling and appealing against the present rents. Neither do I think that the State would get much from navigation tolls. In my opinion a railway to Brewarrina would be a more profitable investment than the locking of the river. The railway  
freights would be very much greater than any tolls which could be charged on the river. I am sure that  
65 people would gladly pay an extra rate if they could get their wool carried from Brewarrina by rail. On wool alone they have to pay about 30s. a ton now, including the insurance, that is from here to Bourke, and if they could get it taken to Byrock for 15s. a ton they would save.

*To Mr. Lee:* I do not think that irrigation would pay in this district. A number of years hence it may pay; but at the present time I do not think that we could compete with the outside markets. I am not  
70 aware that cultivation is discredited amongst pastoralists, but it does not pay. They have their own gardens as a rule, and their little cultivation paddocks. I should think that 30 per cent of them have gardens, and about as many grow fodder for their horses. As a rule they only cultivate a few acres, however. Irrigation is possible, but it does not pay, except in very small areas. I do not say that the country is not capable of being turned to better advantage than at the present time. It is quite capable  
75 of better things, but it is not expedient at the present time to make any change. I favour the construction of a line from Brewarrina to Byrock because it would be better in the public interest than the locking of the river, and I do not think that the district is sufficiently well served at the present time. The approaches to Bourke are so bad that very often in dry seasons stock cannot get there, whereas they can come this way easily. They can get here in any season. I think that the locking of the river would mean  
throwing

Mr. W. G.  
Jameson.  
27 June, 1896.

throwing £120,000 away. We have a navigable river now for 3 years out of every 5. Besides, I think that a railway would encourage small settlement. When a railway runs close to one's door, settlement is bound to follow. In reply to the objection that the railway to Bourke has not created a small settlement in the district, I would say that the country through which it passes is not so suitable for small settlement as this is. It is not such good country. I do not think that the providing of permanent water would give as much 5 impetus to the development of the country as a railway to Brewarrina. For one thing, you could only carry dead weight by the river, whereas, if there were a railway to Brewarrina, we could truck live stock here. In very dry times there is no grass, and it is impossible to drive stock to the western line. Stock often have to be moved to save their lives. The Bourke route is favoured to some extent because we get cheaper carriage by the river than by road, and, as the railway rates are the same to Bourke as to Byrock, 10 it is more convenient to bring goods back that way. If a railway were made here, I suppose that in time it would be taken on to the border—up through Goodooga, I should think—through comparatively easy country. There is a sort of red rise nearly all the way from here to Goodooga. Unless some line of that sort is made, a good deal of the traffic will go to Queensland as soon as the Queensland railway comes to Cunnamulla. I have never known the Darling or its main tributaries to be so dry that there has 15 not been enough water for the stock.

*To the Chairman:* The wool from this district should, I think, be trucked at Brewarrina instead of at Bourke, that being the most economical method, both for the producers and for the country itself. With regard to the intermediate settlement to be benefited between Brewarrina and Byrock, there is Lindsay Brothers' place. There are only a few stations between here and Bourke on the south side of the river. 20 I have a list of some of the stations from which the wool would come. Bangate would send 1,000 bales; Angledool, 1,000 bales; Nullewa, 400 bales; Currawillinghai, 1,000 bales; Milroy, 1,300 bales; Weilmoringle, 1,500 bales; and there is a number of others. From Queensland we should get about 4,000 bales. A great deal of that wool now goes to Narrabri.

Mr. William Armstrong MacVean, Manager, Quantambone Station, sworn, and examined:— 25

Mr. W. A.  
MacVean.  
27 June, 1896.

*To Mr. Black:* I have not been very long in the district, but I know the river-frontage here. I think that a system of artesian bores would be found better for irrigation purposes than the locking of the river. The vast expense of irrigating from the river would always prevent people from raising much agricultural produce here; while the floods to which the district is liable would ruin persons engaged in agriculture. To send wool to Bourke now costs about 27s. 6d. a ton, including what you have to pay for 30 putting it on to the railway trucks; and I think that if the river were improved, and tolls charged upon it, there would not be a great difference in the rates. I am of opinion that a railway would serve the interests of the district better than the locking of the river. The rates might go down a little if the river were locked; but I do not think they would go down very much. If there were extreme competition they would go down; but there would be no knowing how long such competition would last. No doubt 35 if the steam-boat owners could run their boats constantly, they could carry on their business more cheaply. At the present time there is not much difference between the road rate and the river rate. Taking the cost of insurance into consideration, the two are about the same. Of course if the river were always navigable, river carriage would be the cheaper; but I do not see that the Government would get any return from the locking of the river. There would be some chance of getting a return from a 40 railway; but there would be no chance of getting anything from the river. I do not say that the railway would pay very much; but I have not gone into the figures. I am not prejudiced as a local resident, or by having interests on the river. I do not think it would pay to raise water from the river to irrigate the land on the banks. The market would be flooded directly a man had started. I do not think that a railway from Brewarrina to Byrock would be interfered with by the floods. That country is not intercepted 45 by any watercourses of any consequence. There are only two main watercourses; I think that culverts would provide for the others. I cannot say to what depth that country is covered with water in flood-time. Whether a line to Brewarrina would pay or not would depend very much upon the style of railway they constructed. A cheap line might be made to pay, and there would be no necessity to put up expensive stations. The chief traffic on the line would be wool and stock. I do not think there is any prospect of wheat being 50 grown, because the seasons are too uncertain. I am not well up in farming, however. I have only done a little cultivation to raise produce for station use. It would pay me to grow feed for the horses, and so on, in bad seasons, but not for the other stock; it would not pay for sheep. It is questionable whether even the cutting down of scrub pays at times. At present prices it is not worth keeping some sheep alive. The market price would not allow of sheep being artificially fed. It will not pay to feed sheep artificially. 55 In a bad season it would be better to boil them down. I do not think that station-owners would take water from the river to irrigate the land for the purpose of raising fodder crops. The rate of carriage by road to Bourke is about 30s. a ton, and by river, in ordinary times, from 22s. 6d. to 25s. a ton. The river is the speedier mode of transit. Wool is insured from the sheep's back to the market. I should think the insurance would be twice as much on wool going by river. The risk is always considered greater. 60

*To Mr. Hassall:* On our station we have 75,000 sheep and a few cattle and horses. Last year we sent away a little over 1,000 bales of wool. I was not here at the time; but I think that part of the wool went to Bourke, and some of it may have gone to Byrock. Messrs E. Rich & Co. got the contract, and they carried the wool to Sydney. The wool traffic goes through their hands principally, because they have a monopoly of the whole district. I believe they have special rates to offer people. I do not know if 65 there is any particular reason for their being able to give concessions, except that they have been successful in their business. They are a very big firm, and in that way they may keep others out. They can carry more cheaply than we could carry ourselves. I have been getting my back loading from Bourke through Rich & Co. I do not think that the locking of the river would improve our station to any extent. I do not know that the river has ever been dry. There is always plenty of water on the frontage, and 70 no difficulty in getting water for the stock that I know of. I do not think that the raising of the river level 10 feet would be very much improvement, though, if the river level were permanently raised, the country might be flooded more. In 1890 a rise of an inch or two would have caused the whole country to be flooded. The locking of the river would not cause us to go in for irrigation to improve the carrying capacity of our run. There is plenty of water in the river now, if people wanted to irrigate. We have 75 bought a little forage for station use and we grow a little ourselves. We can cut enough bush hay to meet

meet our requirements, together with what crop we grow. I have cultivated 25 acres this year, and am depending upon the natural rainfall. They get two crops out of three in this district, and that will keep us supplied. I do not think that under any circumstances we would do much irrigation. If the scheme were carried out we should not be willing to pay an increased rental for any advantages which it might offer. I do not see that the betterment principle should be applied along the river. You might apply it to the travelling stock route and charge travelling stock something, because the stock route goes along the bank of the river. The locking of the river would not benefit us, nor do I think it would benefit others places along the river. I am not of opinion that people would take advantage of the great volume of water to go in for irrigation. If people settled here and irrigated they would have no market for their produce. A person growing produce under irrigation could not compete with a man who did not require to irrigate. I think that people living in the cooler parts of the country could cultivate more cheaply than anyone in this district. To ask people to go in for irrigation here is only encouraging them to sink their money in the land. Of course if the river were permanently navigable it would be of benefit to the district, but it would not be any great benefit. Everything would then go to Bourke, providing there were no other means of communication. If there were a railway to Byrock, stuff would go there, unless the river were cheaper. Brewarrina is the natural outlet for the produce of the north. 300,000 sheep and about 10,000 head of cattle have passed through the run this year, and it has not been a heavy year for travelling stock. The sheep came from the south-west of Queensland. All the stock make in this way in preference to going to Bourke, there being better water and better grass. There is not much feed in towards Bourke

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*To Mr. Trickett:* I do not think that water would be taken by sheep farmers to flood their pasturage at a cost of 6d. or 1s. an acre. It is out of the question altogether to irrigate a sheep run. It would not pay to do it. I have never come across anyone who paid a rate of 12s. 6d. a ton for river carriage.

*To Mr. Lee:* The only irrigation I have done on the station has been for a garden. I have not had very much experience of irrigation. My remarks about its not paying to cultivate under irrigation in this district referred to the cultivation of fodder. I am not aware that £100 has been obtained as the proceeds of an acre of fruit grown under irrigation in America. I know that this climate is reputed to be a very good one for dry fruits, and fruit could be grown here under irrigation. Of course there is a vast difference between growing fruit and growing oats and wheat. I have only been eight or nine months in this district. I came here from Riverina.

*To the Chairman:* We did not store grass hay in Riverina for feeding sheep, and I do not think it would pay to do it here. The return you get for sheep will not allow you to do that sort of thing. I believe that people have done it; but it has not paid. There is less loss by risking the seasons than by attempting to provide against bad seasons.

35 Mr. James Mannix, homestead lessee, near Brewarrina, sworn, and examined:—

*To Mr. Hassall:* My homestead lease is situated on the Cato. It crosses the Cato near the junction of the Barwon. I have a frontage to both creeks. The lease is situated about 18 miles from Brewarrina. I have been in the district for about eighteen years. Before starting as a homestead lessee, I was engaged in dam-making and tank-sinking. I have a pretty good knowledge of the country, and I do not think that the proposed work will be beneficial to the district generally, because the cost is too great. It might be of some advantage to me personally; but it would be a loss to the country at large. There is a flood here nearly every four or five years, and then there are only a few odd patches which are not flooded. I know all the country down to Bourke; but I speak rather of the country up towards Walgett. The country from Brewarrina to Bourke is similar to that between here and Walgett, and just as likely to be flooded. The country about Brewarrina is mostly low lying, and covered with Coolabah. There may be a few red ridges. The clayey soil is too cold for things to grow well in it. I have grown potatoes. The tops grew well, but the potatoes themselves were very small. I and my partner have 7,000 or 8,000 sheep on two homestead leases. My partner is always doing contract work—dam-sinking, fencing, and so on—while I look after the sheep. There is just a living to be made out of a homestead lease; but that is all. I have to do most of the work myself, except at shearing times, and outside work is very useful for providing a little cash. In 1890, we put two cows on what we believed to be the highest part of our run, and left them there, but when we came back they were drowned. Only one little corner escaped, and it did not contain 30 acres. At that time I took my sheep about 40 miles out, on to a ridge. Another man in the district lost 7,000 sheep which he had left on our land. I do not think that people could go in for agriculture here. I would not do so, and I was brought up on a farm, near Wollongong. I do not think that the locking of the river will induce settlement, because there is not much land available for cultivation. There are odd patches of land, such as that which Mr. Wood has selected; but there is nothing very much. Mr. Wood's land is just about as good as anything between here and Bourke. One might do a little irrigating to make a small garden; but the market is not sufficiently large to consume any large quantity of produce. I would not irrigate land to raise produce for feeding stock in bad times. It would be cheaper to sell the sheep and get them out of the road. I do not think that there will be a large population settled on the river for the next fifty years. I only know one piece of good country between here and the Cato public house. It is on the banks of the river, and pretty high. I consider that a railway from here to Byrock would be more beneficial than the locking of the river, and would meet the requirements of the district better.

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Mr. James Howe Saunders, storekeeper, Brewarrina, sworn, and examined:—

*To Mr. Trickett:* I am carrying on business in Brewarrina, and have been here for the last seven years. Before that I was engaged in mercantile pursuits in Sydney. I believe myself to be well acquainted with the district generally. I am in a large way of business, and get my goods from Sydney by railway to Bourke. When the river is up they come from Bourke by steamer, otherwise they come by road. We also get a large quantity of goods from Byrock when the river is not running. When the river is running, it is generally used to convey goods from Bourke to Brewarrina. The average rate then is £1 a ton for merchandise from Bourke to Brewarrina, and a similar charge for wool going back. Sometimes a small concession is made where there is a very large consignment. I have never known the rate to be as low as 12s. a ton. For team loading we pay in good seasons from 30s. to £2 a ton from Bourke, and from 25s.

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25s. a ton from Byrock. A concession is sometimes made for large quantities. I believe that at the present time if I gave a man 20 tons to bring over, he would bring my goods for £1 a ton. That is as cheap as the river carriage, and I have never known the river rate to be less than £1 a ton. The roads now are in excellent travelling condition. With regard to insurance, wool is generally insured from the sheep's back without regard to the way in which it is carried. There is no insurance on goods coming by teams. This is the first season that the river has been closed for more than a couple of months at a time, during the seven years that I have been here. This year it has not been running since January. Sometimes when we are quite sure of a river which will bring our goods through without risk, we have things sent round from Adelaide or from Melbourne. For general merchandise that saves about one-third of what we should have to pay if we brought it by rail to Bourke and then by river. Certain special lines of goods are carried by rail at a lesser price than general merchandise. The river is largely availed of for getting goods as far up as Bourke. We have to order so long beforehand if we want goods up that way, that we do not bring our goods up the river so much. If the river were permanently navigable to Brewarrina, that means of transit would be likely to be availed of more. We could get our goods round from Sydney and right up the river; but, as a rule, we generally purchase in Melbourne or Adelaide, if we are bringing things up the river. If the river were made permanently navigable, it is inevitable that it would greatly assist the trade of Victoria unless charges were imposed with a view to keeping the traffic in our own Colony. With regard to the state of the road, I consider that we are never likely to have a delay of more than a week in getting goods from Bourke. On two occasions when rain has fallen the journey has taken three weeks instead of the usual one week. The road from here to Byrock is better than the Bourke Road. The first 28 miles from here to Gongolgon passes through black soil; but for the rest of the distance we have a perfect road over gravelly red soil. Goods come through that way in four days. For railway construction, the country between Byrock and the Bogan is almost as easy as it is possible to have. There would have to be a bridge at the Bogan, and then the line would pass over some 10 miles of low country, where the water lies occasionally to a depth of a few inches. Perhaps altogether there are 15 miles of low country, and then you get to the good country again. There is no current in flood time, when the water is lying on that country. I should think that an embankment 1 foot high, with openings to let the water away, would be sufficient for a railway line. I get about 700 tons inwards per annum. My business is chiefly inwards. I am not a carrying agent; but I can say generally that there is a very large amount of traffic between Brewarrina and Bourke. The greater part of our traffic at the present time goes by way of Bourke. If a railway were constructed from Brewarrina to Byrock, I should be very willing to pay a special rate between Byrock and Brewarrina equal to what I pay to have my goods taken to Bourke now. We pay £1 per ton now to get things taken to Bourke, and it would be worth our while to pay £1 per ton to the railway to get things taken to Byrock. In the absence of competition, the steamers charge £1 a ton for river carriage, and it would be much better to send by rail if we could do so for the same money. In sending direct by rail we should save so much handling. At the Bourke end we have to pay about 3s. 6d. a ton for the handling of the goods and their conveyance from the river to the railway station. It is a question whether the Bourke railway should not be extended to the river. If we had a railway to Byrock, it would be used in preference to the river, other things being equal, because we should save so much handling. Besides the actual cost of handling, there is always the risk of loss through breakages consequent upon rough treatment. It is very likely that the present river charges are higher than the charges would be if the river were permanently navigable. We are practically in the hands of one carrying company on the river, and that company has now pretty well a monopoly. Attempts were made to run other steamers; but, owing to the want of a large fleet of boats to do the work for the rival company, people preferred to continue to do business with the original company. I daresay wool comes in here from about 100 miles round under present circumstances, and Brewarrina would be a still larger centre, if the river were permanently navigable, or if we had a railway to Byrock. I favour the construction of the railway, in the first place, because less handling of goods would be required; in the second place, because there would be quicker despatch; and in the third place, because there would be a reduction in cost. Another reason why I should like to see a railway constructed is that it would enable us to move our stock in times of drought. The locking of the river will not facilitate the moving of live stock. This is, I believe, the principal stock route in the Western division. Since I have been here, there have been times when stock would have been removed if it had been possible, and the runs would thus have been relieved; but people could not drive their animals any great distance. The steamers continue to run on the river until they cannot pass a point about 7 miles from here. After that, we will not take the risk of sending goods by river. The damming of the river as far as Bourke might take the trade to the other colonies. Very often goods come as far as Bourke by steamer, but we cannot get them any further. I have had goods stopped at Bourke. If the proposed scheme were carried out, we should get more things up from the other colonies. If the river were permanently dammed as far as Wilcannia, it would be still easier to get things up from the other colonies. Navigation all the way up would then be almost a certainty. If the river were dammed all the way to Wentworth, heavy tolls would have to be imposed to keep the traffic from leaving the colony. The only way in which revenue can be received from the proposed works, is by charging tolls on the river, and they would have to be pretty heavy to pay interest on £120,000. People have gone in for irrigation in this district only to a very small extent, because there is no necessity for it, and it will not pay. The districts nearer the coast can supply us much more cheaply than we can supply ourselves. We get our flour from Dubbo, Wellington, and Milthorpe; butter comes from Mudgee and Sydney, and our forage comes principally from about Orange. The local Chinamen supply garden produce. There are three Chinese gardens here. The population of Brewarrina at the present time is about 450 or 500 persons, and the Chinamen's gardens give an ample supply of vegetables. If 15,000 acres were cultivated in this district, there would not be the slightest chance of a sufficiently large local market to consume the produce, and we could not compete with the producers of colder districts. On the Tarrion, Mr. Olsen has an irrigation farm, but he has been there only a very short time. He has sent in a little forage, which we are very glad to get. I do not think that the district is suited for agriculture at all. It is a pastoral district. Of course, with irrigation, small patches could be cultivated for local requirements, and the supply might create a larger demand. I daresay dried fruits could be produced here, but the cost of growing would be more than they would be worth. If there were sufficient demand for dried fruits, there is nothing to prevent people from producing dried fruits here now. The raising of the river level would

save them a little in the cost of pumping, but I do not see what other advantage it would give them. I do not think that the Government will obtain a large return from this work. People here are very glad to get artesian water where there is no natural water, but where they are near a river I have not heard them express any desire to see water conservation undertaken by the Government. I do not think they would be willing to pay from 6d. to 1s. an acre for irrigating their land. It does not pay them to cultivate for the sake of their sheep. They cultivate to get fodder for their horses. I am not prepared to say that the runs here are improved as much as they could be. They might be improved by ringbarking and fencing, and more water might be obtained by putting down bores away from the frontages. It would not be practicable to carry water to any great distance from the river by fluming. From my point of view it seems to me that in considering this scheme the question of irrigation may be dismissed altogether, as it really has no value. The only question is, should the river be locked with a view to improving it for navigation purposes. I think the Government will get very little return from the charges for water taken for irrigation purposes.

*To Mr. Wright:* The charge for carrying wool from the steamer to the train at Bourke is, I think, about 3s. 6d. a ton. That has to be added to the river freight, making it altogether about 23s. 6d. a ton. People would much sooner pay £1 a ton to be able to send wool direct by rail to Byrock. Although there has been competition on the river I have not known the rates to be reduced below £1 a ton, though I believe that private arrangements have been made to take loading at a little less. I cannot imagine it possible that if the river were made navigable the steamer rates to Bourke would be 5s. a ton. I believe that the people would be prepared to pay a special rate between here and Byrock, if the railway were made to Brewarrina. The Chinamen grow fruit as well as vegetables in their gardens, and there is another garden at Gongolgon. I do not know what its area is, but I should think 5 or 6 acres. I do not think that there is any possibility of this country growing cereals under irrigation.

*To Mr. Black:* Goods are sometimes sent from Brewarrina to Byrock now. We can send to Byrock by carrier for anything down to 25s. a ton, and if the river freight continued as high as it is now, we should be quite willing to pay 20s. a ton for goods going by rail to Byrock. Of course, if the carriers only charged 15s. a ton, and the railway freights were 20s. a ton, we should send by the carrier, or if the river were cheaper we should send by river; but a rate of 15s. a ton would ruin the carriers. I cannot say whether the earnings of a line between Byrock and Brewarrina would pay the cost of maintenance in twenty years.

*To the Chairman:* I do not favour the locking of the river between Walgett and Wentworth, though as a business man it would suit me better. I would favour the construction of a railway from Brewarrina to Byrock, and the locking of the river between Walgett and Brewarrina. Of course, if the river were locked all the way down, traffic could be prevented from leaving the Colony by the imposition of heavy tolls. We bring up our goods by what we find to be the cheapest route, the length of time occupied in transit, and the effect of frequent handling being considerations with us. We give a certain value to speediness of delivery and safety. I am inclined to think that boiling down operations would be facilitated here by the construction of a railway.

*To Mr. Wright:* If the railway rate from Brewarrina to Byrock were 15s. a ton the carriers could not compete. Taking everything into consideration, I do not believe that the river people would find it profitable to carry for a lower rate than that. I know pretty well the profits which are made on the river, and I believe that if the rates were reduced to 15s. a ton the steamer companies would be working only for wages.

Mr. Andrew David Kerrigan, Agent for Messrs. E. Rich & Company, Brewarrina, sworn, and examined:—

*To the Chairman:* I am a native of Brewarrina, and have been with Messrs. E. Rich & Company for fourteen years. I have a full knowledge of the traffic of the river. The present traffic between Bourke and Brewarrina is 10,000 tons—4,000 tons up stream, and about 6,000 tons down stream. The present rate for the carriage of wool is 25s. a ton delivered on the trucks, and including all charges except insurance. The insurance sometimes comes to 6s. per cent. That is the lowest rate that I know of. The rates for ordinary merchandise vary from £1 to 25s. a ton. For wool the Commissioners charge the same rate from Bourke as from Girilambone. If a railway were constructed to Brewarrina I think that a few more hundred tons of wool would come in from the north. The 10,000 tons to which I have just referred would go by train if the railway were here, and there would be a little more. Charging the present rates, the revenue derived from the carriage of that wool would be about £10,000 a year. I do not think that a steamer company could afford to carry anything between Brewarrina and Bourke for less than 10s. a ton, even if the river were locked. Wool and merchandise come in here from the north, north-west, and north-east. There are only about 300 tons of intermediate traffic between here and Bourke. I think that the present fleet of boats would be sufficient, even if the river were permanently navigable. During the last four or five years we have averaged between 27,000 and 30,000 bales of wool between Brewarrina and Bourke; that would be from 5,000 to 6,000 tons. Then there would be about 4,000 tons of merchandise.

Mr. Patrick Dowling McElligott, Brewarrina, sworn, and examined:—

*To Mr. Lee:* I have resided in the district for the last twenty-six years, and have travelled through it pretty well. Since I first came here the population has increased considerably. When I first came to Brewarrina there was scarcely a fence between here and the Gulf of Carpentaria. Produce going from the district was then sent up the Bogan River, through Warren, Dubbo, Orange, and so on. That was the route up to the time of the opening of the railway to Bourke. The traffic now goes chiefly to Bourke and to Byrock. I do not think that the locking of the river would greatly benefit pastoral industry here. Ever since I have been here there has been sufficient water in the river for the stock. Of course it would be a good thing to have the river permanently navigable between here and Bourke; but I do not see that it would be any great advantage either to the squatters or to the residents of Brewarrina. The pastoral men here are fairly well served at present, but in times of drought they have to pay high rates of carriage. They would best be assisted by a light line of railway from Byrock to Brewarrina. There has been a great deal of small settlement in the district since I came here, that is, if you call the occupation of homestead leases small settlement. I cannot say how many homestead lessees there are in the district now, but all the

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Mr. A. D. Kerrigan.

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Mr. P. D. McElligott.

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Mr. P. D.  
McElligott.  
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the land thrown open has been taken up. There have not been many homestead leases abandoned. Homestead lessees may be considered small settlers in comparison with the large station owners who preceded them. There have been a few 640 acre men, but they have not got on very well. I am not totally opposed to the locking of the river, but I consider that the construction of a railway line would be more beneficial, both to the town and to the district. Personally I am not very much concerned about either. I think it is very unlikely that there will be much agricultural settlement and irrigation here. It would be a good thing if such occupation could be established, but I fail to see where agriculturalists would get a market. I myself have had no practical experience of farming or of irrigation, but it is my opinion that agriculture is out of the question so far as this country is concerned. A railway from Byrock to Brewarrina would open up the country lying between this town and Byrock, and it would bring in more traffic from the back country. I have always understood that settlement follows railway construction. Such a railway would make Brewarrina the depôt for all this district, and would enable the people here to get their produce to market more cheaply. The passenger traffic between Brewarrina and Byrock would be considerable, and would add considerably to the revenue. At the present time there are four coaches a week running to Byrock. Some years ago five or six gentlemen in the district offered to become guarantors for the cost of constructing a light line of railway from Byrock to Brewarrina with a fair percentage. At the time I was chairman of a railway league. I cannot say whether those gentlemen are prepared to make the offer again now, but I believe that such a line would pay. I have not gone into the figures.

Mr. Walter Charles Colless, hotelkeeper and homestead lessee, Brewarrina, sworn, and examined:—

Mr.  
W. C. Colless.  
27 June, 1896.

*To Mr. Wright:* I have been about thirty years in the district. I do not think the proposed locking of the river would be of any advantage to the district, or would induce settlement here. If people wished to irrigate, there is already sufficient water in the river. I do not think that any pastoralist would be willing to pay for taking water out of the river to swamp his paddocks with. It does not seem to me that small settlement such as they have at Pera Bore is likely to increase much in this district. I do not think that agricultural producers here could compete with people in other parts of the district where the seasons are regular. In my opinion the soil is not suitable for irrigation, nor do I think you could find 100 acres which in flood time would not be covered with water. I do not think that Mr. Woods' irrigation has been financially successful. The Government would not sell much water at 5s. per acre per annum. If people wanted to irrigate, they could get the water now for nothing. The country north of Brewarrina is very good grazing country, in fact Brewarrina is the natural depôt for a very rich district extending a good distance west. In my opinion a railway would be more beneficial to the district than the locking of the river. It would increase the export of stock and of wool, while Brewarrina is naturally a better depôt than Bourke. If a railway were constructed to Brewarrina, I believe the people here would be willing to pay a special rate of 15s. a ton, though I think the steamers could compete against that rate, if the river were navigable. Still they do not carry stuff at that price now. The teamsters could not compete at 15s. a ton. The country between here and Walgett is similar to that between here and Bourke, and I do not think that the nature of the settlement here is likely to alter much. From here to Gongolgon is black soil country. Beyond Gongolgon you get into stony red soil country. In my opinion Brewarrina is progressing. The district is being cut up into smaller holdings, and the number of homestead lessees has increased. Land has been taken up here under the Act of 1895, but principally by the townspeople. The construction of a railway would bring more traffic from Queensland in stock and wool, and would increase population. In my opinion the people here could, in good seasons, cut and store sufficient natural grass to feed their working stock in bad times, without irrigating at all. This year I cut and stacked as much hay as I thought would satisfy me, and stations near to where I am cut about 40 tons. My brother cut about 30 tons of hay, and he could have cut 100 tons if he had wished. At Bundabulla they do not irrigate; they do at Boorooma. I think that a man without irrigation would get a crop about three times out of five. The country is now used principally for grazing. No one has tried anything else on a large scale, though the stations grow a little produce for their own use. A man named Plowman grew a crop for a year or two. It would not pay people here to irrigate, because they could not compete with the producers in other places. There is some land vacant to the west of the Culgoa, but it is very poor country. The country east and north to the Queensland border is very good and is pretty well all taken up. I do not think that the locking of the river would greatly increase the traffic; but a railway would no doubt attract Queensland traffic. Stock which now goes to Nyngan and Nevertire would, in bad seasons, come here to be trucked, if there were a railway to Brewarrina. Such a line would take all the traffic from the country this side of the border. I do not know how it would affect the Queensland traffic. If there had been any prospect of making money from agriculture, I would have tried it; but the inducement has not been sufficient. My people were among the first to take up land in this district. My father came out here about thirty-seven years ago.

Mr. Andrew Loder, stock and station agent, Brewarrina, sworn, and examined:—

Mr. A. Loder.  
27 June, 1896.

*To Mr. Black:* I have resided in Brewarrina for twelve months, and have been in the district pretty well all my life. I was born just above Walgett, but I was out of the district for twelve years, away at school. If a railway were constructed to Brewarrina traffic would be drawn here from about 150 miles N.E. and N.W. I do not think that Mr. Kerrigan's estimate of the intermediate traffic between here and Bourke—300 tons—is too low. There are only two stations and a few homestead leases there. If the railway were brought to Brewarrina a great many cattle would be trucked here in bad seasons, though in good seasons they might travel further along the line. The best stock route is towards Nyngan or Nevertire. In bad times stock has to travel from here to Byrock without anything to eat, unless scrub is cut up for them, and they must be pretty good when they start to stand the wasting. A few sheep are sent from here to the Bourke chilling works. I am not aware that any attempt has been made to send sheep by steamer. I do not think that agriculture is likely to flourish in the district for the present. I know that at one station on the river they grow lucerne, and it costs about £15 a ton, whereas they could buy as much as they liked landed here for about £5 a ton. The land in this district is pretty well all leased land, but I do not think the squatters have been afraid to cultivate it for fear that there might be

be an influx of agriculturists. I never heard such an idea spoken of. The pastoralists have not under-  
 taken agriculture because they would have no use for any produce they might grow, except perhaps for  
 a few working horses. Some of them have had to irrigate paddocks for their stud stock. I do not think  
 it would pay to grow crops to feed a large number of sheep in times of drought. It would pay better to  
 5 get rid of the sheep at half-price. Large sums of money have been spent in cutting down the mulga for  
 the sheep. It has cost some of the very large stations below Bourke about £100 a week to cut scrub,  
 and then the stock have died from eating it. £1,000 spent on growing feed for sheep would perhaps  
 save £500 worth of sheep. I think that people nowadays know that their sheep are not much better  
 than those of their neighbours. Of course they keep a few valuable sheep for stud purposes. It might  
 10 be advisable sometimes to preserve a certain strain, but only if it could be done at a reasonable cost.  
 Before spending money on growing artificial feed you would have to consider whether it would not be  
 cheaper to lose all your sheep and replace them with others after the drought.

Mr. A. Loder.  
 27 June, 1896.

MONDAY, 29 JUNE, 1896.

[The Sectional Committee met at the Court-house, Brewarrina, at 10 a.m.]

15

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (CHAIRMAN).

The Hon. WILLIAM JOSEPH TRICKETT.		THOMAS HENRY HASSALL, Esq.
CHARLES ALFRED LEE, Esq.		GEORGE BLACK, Esq.
FRANCIS AUGUSTUS WRIGHT, Esq.		

20 The Sectional Committee further considered the proposed Construction of Locks and Weirs on the  
 River Darling.

Mr. Richard James Kelly, chemist and druggist, Brewarrina, sworn, and examined:—

To the Chairman: I have resided twenty-nine years in Brewarrina and four years in Bourke. Altogether  
 I have been here thirty-three years.

25 To Mr. Hassall: I have not had any experience of irrigation or of cultivation. I have an intimate know-  
 ledge of the country between here and Bourke. It is chiefly black soil country. Now and then there are  
 patches of red soil. The soil on the north bank is similar to that on the south bank of the river. I  
 consider it all low-lying flooded country. It would be impossible during floods like those of 1864 or  
 1890 to proceed to Bourke by the surveyed road. You would have to go round by Byrock. The only  
 30 cultivation in the district that I know of, besides the Chinese gardens, is that of Mr. Woods, who suffered  
 to a small extent by the flood. The Chinamen here raise a very fair quantity of fruit; but in the flood  
 of 1890 the whole of their garden was destroyed. The owner claimed £600 or £700 from the Govern-  
 ment because he said that their attempts to save the bridge brought the flood-water on to the garden.  
 A very large number of trees were destroyed by the flood, and part of the land was afterwards abandoned  
 35 altogether. The people in charge of the garden made a bank all round it to keep the flood-water out;  
 but the water rose over the bank. I saw the garden directly after the flood, and it seemed a perfect  
 wreck, while the man in charge told me that he had lost over £100 by the flood. I do not think there is  
 likely to be much irrigation or cultivation done on the banks of the Darling, because the land lies too low,  
 and the settlers would be liable to severe losses. Then, too, I think that produce could be supplied from  
 40 outside markets much more cheaply than we could grow it here. They can get oranges here for 6d. and  
 8d. a dozen; but the Chinamen charge 1s. 6d. and 2s. a dozen for those they grow. They tell me they  
 have to charge this price because of the enormous cost involved in keeping the garden going. I have  
 bought produce from Maitland more cheaply than it could be grown here. Labour is dear here, and, as  
 a rule, the seasons are very bad. I took up a selection some years ago, and I am satisfied that it would  
 45 not pay. I made an attempt at cultivation in a small way, but I found that I could buy things more  
 cheaply than I could grow them, taking everything into consideration. I do not think there would be a  
 sufficient market in the district for very much produce. The demand for forage is limited. It is only  
 now and again that any forage is required. The horses here are turned out as a rule. There are 20  
 or 30 turned out for one that is fed. When we want hay and chaff we can import it more cheaply than  
 50 we can grow it. When there is a very bad drought the working horses have to be fed. All the other  
 horses are sent somewhere where there is grass, but in the majority of cases they die. I do not think  
 that the raising of the river level 10 ft. would offer any inducement to settlement. There may be  
 occasional pieces of good land between here and Bourke, but I think that in the flood of 1890 even they  
 were covered. Of course the locking of the river would give cheaper carriage than that you can get by  
 55 teams. During the greater part of the time that I have been here the river has been much in the state  
 in which it is at present. There have been years when the river has been navigable for practically the  
 whole 12 months. That has been notably the case of late years. Of course a navigable river is an  
 advantage to Brewarrina people, because the carriage by steamer is a shade cheaper than carriage by the  
 teamsters. There may be a difference of 5s. or 10s. a ton. Then, too, goods sent by steamer get here  
 60 two days sooner than goods sent by road. I do not think the residents would like to have the betterment  
 principle applied to their property, because I do not believe that the scheme would increase the value of  
 land to the extent estimated by the Government officers. A permanently navigable river would be a  
 slight advantage to people living on the river; but many of those who live on the river have told me that  
 they do not want to see this work carried out. The manager of Boorooma Station told me that he would  
 65 not use the river. I think that the locking of the river would be a complete failure, and a waste of public  
 money. I made a personal protest to the Minister for Mines when the Bourke weir was commenced. It  
 is a fact that a firm having its headquarters in Bourke practically controls the river traffic; but it would  
 be an advantage to the business people of Bourke to be able to get their goods brought up by river,  
 because they would get them more quickly by steamer than by dray, and in very wet weather teamsters  
 70 cannot travel. No doubt, with the locking of the river, the trade of this district would be pretty well  
 controlled by one firm. It is pretty well controlled by that firm now. In my opinion it would be a  
 monstrous absurdity to spend £120,000 in locking the Darling. I believe that the construction of a  
 railway to Brewarrina would benefit the country more. There are hundreds of people in favour of a  
 railway line to every two or three in favour of the locking of the river. A good deal of traffic comes in  
 here

Mr.  
R. J. Kelly.  
29 June, 1896.

here from the country lying to the north; that is cattle, sheep, and wool. The people living out in that direction have told me that they are not in favour of the locking of the river, so that I imagine they would not derive much advantage from it. I think that the construction of a railway would bring more traffic to Brewarrina. With a railway we would get a very large revenue from the traffic coming from stations on the Queensland border. Wool comes to Brewarrina from distances of 100 and even 120 5 miles. If the steamers are running, it goes on by river to Bourke, but if there was a railway to Brewarrina it would be trucked here. The pastoralists do not care to pay for insuring their wool on the steamers, and they do not like the double handling. I am certain that people would not object to pay the extra rate of 15s. a ton from Brewarrina to Byrock. The average amount of wool passing through Brewarrina is 30,000 or 35,000 bales, representing 5000 tons, while the inward traffic amounts to 6,500 10 tons. The number of stock in the Brewarrina district, according to the Stock Inspector's return for 1895, is 1,371,470 sheep, 16,164 cattle, and 4,765 horses. The postal returns, including telegrams, stamps, and money orders came to £9,998. The land revenue derived from Brewarrina district is £28,318 per annum, which the Crown receives from 37,000 pastoral leases containing a total area of 2,588,401 acres. From 17 occupation licenses, embracing an area of 418,520 acres, the Crown receives 15 annually £2,556; from 153 homestead leases, containing 1,405,669 acres, the Crown receives a revenue of £15,000 a year. There are 90 conditional leases, containing 145,402 acres, from which the Crown claims an annual rental of £1,784. The total revenue of the Lands Office last year amounted to £48,000. I think that the Government ought either to make a road between here and Byrock, or make a railway. If a railway were decided upon, very little land would have to be resumed, because at present it is nearly 20 all Crown land.

Mr. William Coleman, caretaker of the bridge at Brewarrina, sworn, and examined:—

Mr.  
W. Coleman.  
29 June, 1896.

*To Mr. Trickett*: I have been caretaker of the bridge for five years, and I have been in the district for twenty years. During the heavy flood of 1890 I was working on the Billabong Bridge. I do not keep a record of the readings of the river gauge. We did not get a good river until 1890. Before that there 25 was about two years' drought and one year's flood. From 1886 to 1893 we only lost one season. A little wool went down last year, and a little went down the year before; but this year none has gone down. The last steamer went down about three months ago. Two came up during a short flood. I have noticed that the river as a rule washes away on the northern side and makes up on the southern side. The deck of the bridge is 50 feet above the bed of the river. The highest flood I have seen came to within 4 ft. 4 in. 30 of the deck of the bridge. In 1890, the flood-water was 3 inches deep on the platforms. I have only raised the drawbridge once during the last twelve months; but in the wool season, if the river is navigable, it has to be raised frequently. In good seasons wool comes down from Coliarondabri and Mogul Mogil sometimes. The river is generally navigable between Collawaroy and Brewarrina; but I have seen steamers stuck for a couple of days on the Brewarrina rocks through being in too great a hurry to cross. 35 The erection of a weir at Brewarrina would not make the river navigable to Walgett, unless it considerably raised the height of the water at Collawaroy Rocks. At the present time steamers could not get across those rocks. There is not much timber coming down the river at flood-time. If I am away for a day or two during a flood, I may have a little difficulty with the timber for about half-an-hour; but generally there is no difficulty in keeping floating timber away from the bridge. The current is very slight. In my 40 opinion if any obstruction were placed in this stream the river would silt up a great deal. There are places in the main channel—for instance, below the woolshed—where it silts up in flood-time; but directly the water drops again the silt is washed out.

*To the Chairman*: I have not noticed any great changes in the river channel since I have been here. I have only seen the gradual change that I have mentioned. 45

*To Mr. Wright*: I cannot say if that change is going on for the whole length of the river. I can only speak of the river about the bridge. That is the only place where I have taken notice of it.

Mr. Thomas MacMahon, storekeeper, Brewarrina, sworn, and examined:—

Mr. T.  
MacMahon.  
29 June, 1896.

*To Mr. Lee*: I have resided twenty-one years in Brewarrina, and I was in Gongolgon for a couple of years. I hardly think that the proposed scheme if carried out would be a payable affair. In most parts 50 of the river there is always sufficient water for irrigation purposes, even at times like the present; and, if the scheme were carried out, pumping appliances would be necessary to raise the water from the river to a height from which it could be distributed over the adjacent lands. I hardly think that the results which might be obtained from the scheme would be commensurate with its cost. If land were thrown open for settlement within 3 or 4 miles of each side of the river, people might be induced to come here; 55 but the settlement would be only patchy. I do not think that 15,000 acres would be settled, nor, in my opinion, would the squatters make use of water. At Quantambone, and along the Cato, where there is sufficient water for irrigation purposes, nothing of the kind has been attempted. If irrigation were carried on in any large scale, the local demand would not be sufficient to absorb whatever produce was raised. In dry seasons there is a good demand for produce. I do not think that the western country is 60 capable of carrying small settlement. The population here is not sufficiently large to allow of irrigation to any great extent. If people could send their produce to market from this district, they would settle here. Of course, people could grow produce here, that is horse feed and fruits. The climate is suited for fruit drying, and, no doubt, that industry could be entered upon. If the Government laid out small settlements, such as that at Pera Bore, no doubt people might be induced to come here; but they must 65 have funds to go into a thing like that. I think that the western country is purely a pastoral country, though I do not say that it will always continue to be thinly populated. No doubt in time the country will be cut up into small areas. The land is undoubtedly good. I do not think that the district would get much benefit from the locking of the river, because at the present time we are getting carriage from Byrock by team cheaper than we could get it by steamer from Bourke. A railway would undoubtedly be 70 very much better for Brewarrina than an improved river. I think that such a line would materially increase the traffic from the back country. No doubt a railway would do more for the settlement of this district than the locking of the river. In answer to the objection that there is no small settlement along the Bourke line, I would say that our country is better for small settlers. At Bourke, if they want irrigation, they have every advantage now, because they near a railway. 75

Richard

Richard Randolph Machattie, Esq., grazier, Brewarrina, sworn, and examined:—

*To the Chairman:* I at one time represented this district in the Legislative Assembly. It was then included in the Bourke electorate.

R. R.  
Machattie,  
Esq.

29 June, 1896.

*To Mr. Wright:* There is no doubt that the proposed scheme would make the river navigable; but I do not see that it would confer any decided advantage upon the district. I do not know that carriage to Bourke by river is cheaper than carriage by road to Byrock. I have paid, when the river was full and there was competition, no less than 25s. a ton for carriage to Bourke by steamer. I believe that on one occasion I had stuff carried for £1 a ton; but the general rate is 25s. a ton: that is, for goods up and down, even when there is competition. To send wool costs, I think, 30s. a ton, and you could send it to Byrock for about the same price. I have had wool taken to Byrock by team when there was no river for less money than I have had it taken by steamer to Bourke when there was a full river and competition. At present the river is navigable for 17 miles above Brewarrina. There is plenty of water as far as the Collawaroy Rocks. Under normal conditions river navigation is always interfered with here by a rocky bar known as the Fisheries, though I cannot see that it would be much advantage to the district if that bar were removed. It would be of no advantage to me personally. With regard to the irrigation aspect of the proposed scheme, I do not think that there will be any irrigation, except in the very distant future. I do not see that there is any possibility of the Government getting people to pay license fees of 5s. and 1s. an acre for the privilege of taking water from the river. I do not think the land is suitable for cultivation. Of course there are small patches here and there having a sandy formation which would be suitable for growing crops; but I do not know that areas of 100 acres or even 50 acres could be got. No matter how much water you pump on to the land, I do not think you could make a certainty of cultivation by irrigation. I have a good personal knowledge of this district. I was first in charge and second in charge of the survey during 1863, 1864, 1865, and part of 1866. North Bourke is the first red sandy point on the river that I know of. Then there is similar land at Brewarrina; but I do not know of any other land of the kind on the river. There is a very high point near Beemery station; but I cannot speak as to the character of the soil there. The bulk of the soil in the district is cretaceous clay, and it would require engines of incredible power to fill up the enormous caverns and cracks which occur in summer time. The Chinese garden here is composed of made ground. It was fairly low; but, having a dam around it, an enormous quantity of sand was floated into it, and stayed there. I have a small irrigated garden at my own house. I do not think that many people would be willing to come into the district to take up 20 or 30-acre farms. Mr. Olsen has a small irrigation plant on Willis' property, on the Tarrion; but I know that within the last month he has been unable to sell the produce grown there. Three years ago I got a splendid crop of hay under natural conditions, and I thought I would do fairly well with it; but I found that they could send up chaff from Orange and other places down the line for £2 a ton less than I could grow it here. The seed was very expensive, and it is difficult to get ploughmen here, and altogether the expense attached to a small experiment of that kind is very great. Down the country they grow hay for next to nothing. Down there I could get a man to do everything for from 10s. to 12s. a week. One would think that a local man could compete with producers who are handicapped by long train carriage, but that is not so. Besides, the market here is very small. This is not a very good season about Brewarrina, and numbers of us have been out looking for country. Five miles up the Narran, and for miles up the Barwon, there is not a blade of grass; but the Bourke people say that it is the most wonderful season they have had. Over there they have had 7 inches of rain as against our 1.50 or 1.70 inches. I would rather see a railway constructed to Brewarrina than the proposed locking of the Darling. As matters have stood of late years every pastoralist has been compelled to stock his country as fully as possible. The price of stock has fallen so much that one could not exist and maintain a family otherwise. When bad times come the stock is lost, but if there were a railway at Brewarrina the pastoralists and homestead lessees—and this is one of the best selected districts that we have—would stock with more confidence, knowing that they could at any time send away 1,000 sheep if they wanted to do so. It is an exceptionally good homestead lease that will carry 3,000 sheep, and at present, if we are overstocked, we have no chance of getting our sheep away. Stock could not be sent from here by the steamers. A railway would be of advantage to the country to the north and to the Queensland country almost as far as Cubby. This is the natural stock route from Queensland. I believe that if we had a railway prime mobs of 100, 200, and 300 head of cattle which now go to Bourke would come here. The stock route in Queensland is from tank to tank, over very indifferent country. From Queensland here the route is from creek to creek. When they come to Brewarrina they can follow the Barwon to the Marra, and the Marra to the Bogan. A great deal of stock go down to Warren, but a railway here would, I think, divert that traffic. I do not think that this country is likely to be taken up for agricultural purposes, either in my time or in that of my children. I can distinctly say from experience that this climate is not suitable for stone fruit. The excessive heat is too much for the trees, no matter how much water you put on to their roots. If you spray water on to the trees, they will blister and die at once. We have exceptionally hot winds during January, February, and even as early as November, and the fruit then shrivels to nothing. Then, too, the white ant attacks the apricot and the peach trees. A tree will apparently be in beautiful health and about to bear, but next day it will be down, and if you examine it you will see that the ants have got under the bark. In a small garden we lost thirteen or fourteen stone-fruit trees last year. The plums did not suffer so much, but apricots and peaches are not worth growing, even for your own use. You can grow anything belonging to the citrus tribe here, but you cannot grow apples. The vine will grow if saturated with water, but then the grape has no flavour. I speak from my own experience. I think that there is no possibility of 400 or 500 agriculturists settling on the banks of the Darling. If they did settle here they would have no market for their produce.

*To Mr. Lee:* I am of opinion that the country west of the Darling is not suitable and never will be suitable for irrigation. The formation of the soil and the excessive heat will destroy all chance of successful cultivation. I know nothing about the crops grown in foreign countries; I speak as to the cereals and fruits I know in Australia. I have given great attention to these matters for years past. I was here first in 1857, though I did not come here permanently until 1862. I was at the Fisheries, Brewarrina, on the first Sunday after the 13th April, 1857. I rode up then from the junction of the dry Bogan. We surveyed the country below there for 400 miles. We surveyed the New South Wales Illara,

R. R.  
Machattie,  
Esq.  
29 June, 1896.

Illara, Paroo, Cuttaburra, and Warrego, and defined the Queensland boundary on those rivers. In my opinion, if you dammed the cowals you would render this country more expensive to work than it is now, that is, if it continued to be used for pastoral purposes. Instead of being able to look after your boundaries by riding about on a horse, you would have to go about in boats, and you would require punts to shift your sheep. As far as the Barwon is concerned, it is a mistake to believe that the flooding of the billabongs produces grass. The flood-water leaves *debris* all over the country, and there are large areas which have not yet recovered from the flood of 1890, and perhaps never will. For years past I have not altered my opinion about this country. I have never left it for eleven years, but I have not seen anything to alter my belief that we require light lines of railway to provide access and egress. What earthly good would irrigation have been during the heat wave which we had last summer. 5

*To Mr. Trickett:* There has been no great reduction in freight when the river has been continuously navigable. When the river is full the teamsters do not compete; in fact, they cannot. I do not think it is likely that we would have goods carried for 7s. 6s. a ton if the river were made permanently navigable, because when Rich & Company and Wright, Heaton, & Company both had steamers on the river, and steamers were coming here from Adelaide, there was no reduction, although the river was running for four 15 years. The only way in which the Government could get a return for the proposed expenditure would be by running steamers themselves or by charging tolls. If the railway were brought to Brewarrina, I should be willing to pay an extra rate on goods carried to Byrock, because of the advantage which such communication with the metropolis would give me. Such a line would be availed of for stock as well as for wool. Then, if there were a flood, or if the season were bad, we could always get away. 20

*To Mr. Black:* Stone fruits ripen here somewhere in November—October and November. We have hot winds from November, that is, excessively hot winds; but we have hot winds from the end of September.

*To Mr. Wright:* If the railway were taken to Brewarrina, I would be willing to pay an extra rate of 15s. a ton on goods carried to Byrock.

Mr. Charles Crane, storeman, Messrs. E. Rich & Company, Brewarrina, sworn, and examined:— 25

Mr. C. Crane, *To Mr. Trickett:* Up to the end of last October, I kept a register of the readings on the river gauge, but I gave up doing so, because £5 a year was deducted from my salary. I supplied the figures to the Department from year to year. Those are the figures appearing in the official report. They are correct. 29 June, 1896.

THURSDAY, 2 JULY, 1896.

[The Sectional Committee met at the Council Chambers, Bourke, at 10 a.m.] 30

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (CHAIRMAN).	
THE HON. WILLIAM JOSEPH TRICKETT.	THOMAS HENRY HASSALL, Esq.
CHARLES ALFRED LEE, Esq.	GEORGE BLACK, Esq.
FRANCIS AUGUSTUS WRIGHT, Esq.	

35

The Sectional Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Mr. John Smith Jefferson, Manager, Government Farm, Pera Bore, sworn, and examined:—

Mr. J. S.  
Jefferson.  
2 July, 1896.

*To the Chairman:* Besides being manager of the Government farm, I have charge of the distribution of water to the settlers near the bore, and of the public watering-place there. I have occupied my present 40 position since 1st February.

*To Mr. Black:* I have had experience of irrigation in California. I was connected with irrigation work there for about seven years. Irrigation there is chiefly done by gravitation; I have had experience of irrigation from artesian supplies, and of irrigation with river water. My experience of irrigating from artesian supplies in America was, that no deleterious effects followed the use of that water, and the results 45 were very satisfactory. I have known artesian water to be used for irrigation for six or seven years continuously. In the generality of cases no bad effects follow, but, of course, everything depends upon the character of the water used. In America when water is much charged with alkali, they think it necessary to drain the ground. The amount of drainage necessary depends mostly upon the nature of the subsoil. There might be deleterious matter in the subsoil which would be brought to the surface by evaporation if the 50 surplus water was not drained off. I never heard of any attempt being made to scrape the alkali deposit from the surface of the ground. Such a process would be very expensive. So far as my knowledge of the Californian soil goes, it is not superior to the soil in this neighbourhood. The irrigation settlements in California are generally very prosperous. They have railway communication with their market, and also water-carriage. The Fresno settlement, where I was, has been very successful. It is 150 miles from San 55 Francisco, and its main output goes there. There is also a local market. Since I left California, I have heard that direct communication to the coast has been opened up. A local market is found for nearly all lucerne grown in the settlement at Fresno. I believe that they charge 1½ dollar per 100 lb. for conveying dried fruits to San Francisco. After my American experience, I am of opinion that this locality is undoubtedly suitable for irrigation. The red loam soil is preferable to the cretaceous clay. My knowledge 60 of the district is limited, but I understand that on the banks of the Darling there is quite a large area of red soil. I should not call the Pera soil volcanic. It is a red loam, and varies from a sandy loam to a clayey loam. I believe that, as a rule, the red soil is higher than the cretaceous black soil, and less likely to be flooded. Floods, in my opinion, do more harm than good. The good effects derived from a flood are overcome by the disaster with which it is attended. I have heard about the failure of the Mildura settlement; but 65 I have not been there. The statement that one of the causes of failure was excessive downward filtration, or seepage, is probably correct. I could believe that only 50 per cent. of the water pumped from the river reached

Mr. J. S.  
Jefferson.  
2 July, 1896.

reached the point of distribution. I understand that at Mildura the main channels were attacked by crawfish, and this caused a leakage. The downward filtration at Pera would be very slight indeed. I made a drain there round a block 6 ft. square, and kept it filled with water for twenty-four hours, and at the end of that time the water had not reached the middle of the block. There were a couple of feet in the middle of the block perfectly dry, the lateral seepage having been only 2 ft. The amount of loss from a ditch would depend largely upon the way in which that ditch was constructed. A newly-made ditch will allow the water to seep away freely, whereas a ditch that has been in use for six or eight months, especially if it has been puddled and graded, will not allow half as much to escape. The seepage at Pera will be very slight. With properly-constructed ditches it will be immaterial. I do not think it will equal 25 per cent.

10 If the Committee desire me to do so, I can make some experiments to ascertain the downward filtration in the red soil at Pera and in the cretaceous clay in the neighbourhood, and I will embody the results in a statement, and send it to the Committee in Sydney. I could not give you the exact figures as to the cost of irrigation by gravitation per acre per annum in California. The men who sell the land there usually sell a water-right with it. They do not charge for the water at so much per acre. Some of the

15 larger corporations sell the land with a perpetual water-right attached. In other places the companies charge for the water, and I believe that the average price is £1 per acre. I could not tell you off-hand what it costs per acre per annum to irrigate with artesian water in California. It is more expensive than irrigation by gravitation. At a place of which I had charge, we did not keep an account of the expense of irrigating from a well 200 feet deep, but I know how many acres per day we irrigated, and how many men

20 were required for the irrigation work. It was not a flowing well, but the water came to within 25 feet of the surface. We pumped sufficient water to irrigate about four acres of trees per day. Three men were entrusted with the work; one managed the engine and pump, and two managed the water. These men earned a dollar per day each and their board. The ground irrigated was much more uneven than that at Pera. There were low places 8 feet in depth, round which we had to carry the water in furrows. I

25 might add that on that place, with a rainfall of eight inches and two irrigations, the apricot trees grew 7 feet in one season. The orchard to which I refer was planted about six years ago, it had not come to bearing when I left the district. I do not think the ordinary settler, who attempted to work alone and unaided, would be able to bear the expense of pumping. I think it would be a profitable investment for a number of people to settle on the banks of the river and to work a pump for the common use. I do

30 not think the raising of the river level 8 feet by means of weirs would make much difference in the cost of pumping from the Darling; I am not well acquainted with the river banks. I cannot give the cost of raising water per foot, though I will try to supply it. An engineer would be likely to give you that information. The water we have at Pera contains a considerable percentage of carbonate of soda, which is injurious to all plant growth; and then, too, there is very little humus in the Pera water. River water,

35 where you can get it, is also preferable to artesian water, because its fertilising properties are greater. I do not think it will be necessary to drain at Pera for years to come. The drainage in connection with the bores will depend largely upon the quality of the artesian water and on the quality of the soil. The subsoil at Pera is nearly all lime. I cannot say whether that is likely to improve the water. The soil at Pera has a tendency to cake after water has been put upon it; but a similar effect follows a fall of rain.

40 I have a slight acquaintance with the red soil at North Bourke. I should judge, from a casual observation, that it is superior to the Pera soil. I have not been far back from the road, and could not say positively whether the contour of the ground is suitable for irrigation channels; so far as I know, it is. That country is very close to the river. I have not made any examination of the cretaceous clay soil in this neighbourhood; but I believe it would be suitable for certain crops. It would grow lucerne and

45 certain kinds of fruit profitably. Of course, if the subsoil were too stiff to allow the roots to go down, lucerne would suffer in times of drought. I know nothing as to the depth of this soil. In California fixed weirs are used for damming the water channels. The soil there is principally sedimentary, and in many places is similar to that on the banks of the Darling. The watercourses are dammed near their source, and to the irrigating canals where the banks are high, so as to give sufficient fall. We do not dam the rivers

50 where they are running through flat country. If we did they would probably cut out fresh channels for themselves. Where the banks are liable to flood, I think that it would be advantageous to adopt weirs which could be opened to give egress to flood-water. The cost of irrigating at Pera depends largely upon the crop that is being grown. Irrigation for vegetables is very expensive. We have grown no vegetables except for our own use. The cost of irrigating four acres for a fruit crop would be 15s. for the making

55 of temporary furrows, and the wages of two men for one day, that is 14s., for distributing the water; a total cost of 29s. for watering four acres once. It is only necessary to irrigate a fruit crop four times, or possibly five times, a year. The total cost of irrigating such a crop would be £7 5s. a year for four acres. I think that is decidedly inexpensive. I think fruit grown here would be able to compete successfully with fruit grown in other places under natural conditions. The fact that fruit here would mature

60 earlier than in other places enters partly into my reason for making that statement, but only to a very small extent. I think that competition would be possible without taking early maturity into consideration. I could not now say what it costs at Pera to irrigate for fodder crops. It would take a man with a dray a whole day to bring produce into Bourke and return, but if the roads were bad it might take him twice as long. For that reason a settlement at North Bourke would be much more favourably situated.

65 To Mr. Hassall: My experience in California leads me to believe that irrigation can be profitably undertaken in New South Wales for the production of fruit, lucerne, and other produce. I do not hold the opinion that it would be necessary to confine the production to articles that could be easily carried, such as peas. I think that sufficient fruit could be grown at Pera under irrigation to justify the erection of a small cannery after a few years. The production at Pera will, of course, cheapen the local

70 supply. I think there is room for a number of irrigation settlements in this district. The advantages they have in California are no greater than we have here. The climate, however, is more certain. One of the most paying industries that could be started in connection with irrigation here would be fruit culture and fruit preserving; not so much canning as drying. The future of the fruit industry in New South Wales to-day is much brighter than it is in California. Dealers in dried fruits in Sydney—such as

75 Horderm and others—told me that they were paying about 8d. per pound for imported Californian fruit. We can grow fruit profitably at from 5d. to 6d. per pound. In four years' time I understand the duty will be taken off fruit, making the wholesale price in Sydney 6d. per pound, and this will leave us a good margin of profit. Peaches, apricots, and prunes could be grown very well here. The difference in weight between

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between fresh fruit and dried fruit varies. Six or 7 pounds of fresh peaches make 1 pound of dried peaches;  $2\frac{1}{2}$  pounds of fresh French prunes make 1 pound of dried prunes; 5 pounds of fresh apricots make 1 pound of dried apricots. Nine-tenths of the fruit produced in California is dried. The amount of fresh fruit sent to San Francisco is a mere bagatelle compared with the quantity of dried fruit which is sent there. The black soil of this district would be suitable for certain kinds of fruit, but the red soil is more generally suitable. If the State were to go in for irrigation on a large scale I think it would be best to get the water from the river. I do not think there will be 100 miles of land irrigated to every mile of river frontage in this district. 5

*To Mr. Trickett:* For fruit-growing and for fruit-drying the conditions which prevail here are much better than those which prevail in any other part of the Colony, so far as my knowledge of the Colony goes. We have a longer and drier summer than they have elsewhere. With a dry, hot climate, the finest quality of fruit is produced, and such a climate is necessary for fruit-drying. Then, too, we are six weeks earlier than the Sydney market, and later varieties mature better. Of lucerne, I believe we can grow two more crops in a year than could be grown in most parts of New South Wales. Then, too, the dairying industry could be started here. One of the finest dairies in California is situated near Bakersfield, Kern county, one of the hottest parts of California. I have not spent a complete summer in Bourke. I have talked to one or two of the growers here, and I believe that the failure of the trees during hot weather is due more to want of water and proper management than to anything else. I have visited Mackenzie's garden, and I have seen the stone fruits there. They are not looking well. I am aware that such trees are very subject to the ravages of the white ant, but I believe that the same difficulty is experienced in other parts of New South Wales. I believe that stone fruits will be found most profitable here, notwithstanding the experience of the past. In irrigating an orchard we form a basin round each tree, and fill it with water. Such crops as lucerne are flooded. A settler at Pera pays 5s. per acre per annum for his land and the water supplied to him, but I could not say what it costs the Government to supply that water. I have not seen the same terms given in America. Most of the irrigation schemes in America are by gravitation which would point to the fact that it is a more inexpensive way of supplying water. There is a great number of people at each place. Things are done on a much larger scale than at Pera. The water rights in California are not generally held by the farmers themselves on a mutual benefit principle. A private corporation is formed, which secures the right to dam a river and to distribute the water to an irrigation colony. In many cases these corporations own the land, through which they construct an irrigation canal and sell to the colonists, giving each of those who buy from them a water right. In other cases the companies simply supply the water, and charge so much per acre per annum for it. I do not think that many people would be ready to sign a bond promising to take water if the Government said that they would only supply water in the event of a certain number of people subscribing for it. Naturally people would be very cautious in such a matter. As the result of the operations of these water companies in California land in many places has increased to twenty times its original value. If it were demonstrated that a few men could make a profitable living by irrigation in this district others would follow. It must necessarily take time to settle a district like this. I have never made any examination to ascertain the area of land available for irrigation between here and Brewarrina. If the soil was so porous that the water sank rapidly through it, that would be a disadvantage. I have never been up the river above Bourke. The soil at Pera will not require to be manured for the next seven years. Of course, after growing exhausting crops such as sorghum for a few years, it will be necessary to supply certain ingredients to the soil, but crops such as lucerne will not require any manure. In California hardly a man uses manure, except such as is supplied by his barnyard, and most of the soil there is inferior in regard to the amount of plant food it contains to that of Pera. 45

*To Mr. Wright:* The Sacramento Valley is a vast level plain 400 miles long and 150 miles across. The undulations there are slight.

*To Mr. Trickett:* Undoubtedly any soil will be worn out by constant cropping. In my opinion this would be a good district for raisin growing. Raisins would be grown simply to supply the Australian demand.

*To Mr. Leo:* The selectors at Pera hold homestead selections, upon which the payment is £5 per acre for a 20-acre block for the first five years, or  $1\frac{1}{2}$  per cent. on the capital value of the land. I do not know what the value of land is in this district; but I should not like to give £1 an acre for land that was not supplied with water. The farmers at Pera are really paying 5s. for their land and £4 15s. for the water. After five years these people pay  $2\frac{1}{2}$  per cent. upon the capital value of their land, and, if you exclude the expenditure in connection with the Government farm, the revenue derived from them will go a long way towards paying interest on the cost of supplying water to the settlement. The settlement is not yet twelve months old, but the results obtained so far are very encouraging. During my residence in America I was mostly in California; I spent a short time in Oregon. I was four summers in Fresno county; I was there through the raisin season and the fruit season; I was with the California Fruit and Wine Company, a San Francisco syndicate, which held 640 acres under irrigated fruit. The land was irrigated by river water brought on to the ground by a large watering ditch owned by a private company. At the present time there is a glut in the raisin market in California, and the profits of the growers have dropped one-half. While I lived in Fresno the average return from raisin vineyards was 100 dollars per acre net profit, or £20 per acre. Raisin growing has been overdone in California. At the time I speak of the prices were steady, and the average return from raisins was what I have given. Providing a farmer knew something about raisin growing and raisin making, he could realise £20 an acre under irrigation. I would recommend farmers here to go in for raisin growing to a small extent, say a couple of acres in a 20-acre block. I am satisfied that there would be a local demand for a limited supply. Of course, if too large an area were cultivated there would be over production, and prices would go down. The damage done by floods depends usually upon the kind of crop which is covered by the water. It would be very inadvisable for anyone to attempt to grow stone fruits upon land liable to be flooded. I have heard that the land between here and Brewarrina, close to the river, is liable to inundation; but I believe that is only at very rare intervals. In the Sacramento Valley the river rises every ten years and floods the land, but that does not prevent fruit-growers from raising profitable crops there. They can risk a flood every eight or ten years; and besides, there are many sorts of fruits which will stand flooding. At the same time, a man who had settled upon high land would have an advantage over a man who settled on low land. In choosing an irrigation area I would select high land. I understand the land at North Bourke is above flood-level but I believe the red soil country is the highest in the district. I think the piece of land at North

North Bourke would afford an excellent opportunity for proving whether irrigation could be carried on here under a pumping scheme. I believe the soil there is equal to the Pera soil, judging from its general appearance; but I have not examined it; the river water would be better than artesian water. So far as my knowledge of New South Wales goes, I know of no better place where one could attempt the

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5 experiment.

*To Mr. Wright:* In California I was engaged in agriculture, as a supervisor and a user of water. I could not tell you the chemical analysis of the artesian water in California. If the surface soil at Pera became surcharged with carbonate of soda to any injurious extent, bad results could be prevented by the application of gypsum. Notwithstanding what I have said about the small amount of seepage at Pera, I do not think that the evaporation there would be very great. I was speaking of the seepage from puddled ditches; but, of course, the water when applied to the ground would be put on to loose well-ploughed soil which would absorb and hold the moisture. With regard to the probability of this district being settled before districts nearer the coast, of course if there were better land and better natural conditions on the Macquarie, the Lachlan, and other rivers, that would militate against people coming here; but our climate is greatly in our favour. From 90 to 100 degrees is the average summer heat in Fresno. At Los Angeles the temperature is milder. Fresno is in the middle of the St. Joaquin Valley. For five weeks I have known the temperature in Fresno to be over 100 degrees in the day-time. Summer lasts there from six to seven months, and the yearly rainfall is about eight inches. It rains there in the winter-time. The last rains generally come about April. I came to New South Wales in February, 1895. Since I came here I have gone as far as the source of the Hunter River, and have a thorough knowledge of that part of the country. In fact, I know nearly every farmer living there. Very little of that country is suitable for irrigation. The soil is good, but it is not suitable for irrigation. The country is hilly, with small pockets of farming land; back from the rivers there is no farming land at all. It is very suitable land for grapes and for fruit. It is not as suitable as this country for the production of fresh fruit. I have not seen the Lachlan or the Macquarie, nor do I know the country along the western line, except as I saw it from the train. Fresh fruit in California is worth from 1 cent to 2 cents per lb. We could not compete in fresh fruit with districts nearer Sydney; but I am convinced that the fruit-grower in the Western district has a better financial prospect than the grower in the Parramatta district, because of the better climate and the fact that he can dry his fruit. Of course, fruit can be dried artificially. It is dried in America; I have dried it there. The man who has a blazing sun under which to dry his fruit will dry it at one-tenth of the cost that would be required if an evaporator were used. Evaporated fruit obtains the highest prices. Eleven of the blocks at Pera have been selected. Even without the farm I daresay the Government would have to pay a man £100 a year to reside at Pera and look after the public watering place. As that amount would have to be paid in any case, I do not see that it should be debited against the settlement. Travelling stock pay for the water they take; but the revenue derived in that way is very small. I believe that in some places the bores are farmed out. I am satisfied that the Government would not get £20 or £30 a year rent from the Pera Bore, if the ground surrounding it was in the state that it was in 12 months ago. I do not think the Government could afford to give people land for 5s. an acre and supply them with water, supposing that water had to be pumped. I do not know of any case in California where water is supplied

40 so cheaply.

*To the Chairman:* It is usual in renting a bore to give the lessee a lease of 640 acres surrounding it. The rent for the land is included in the rent for the bore. The rent for the 20 blocks at Pera, if they were all occupied, would be £100 a year, and at the end of 5 years it would be £200 a year. £100 a year would have to be paid by the Government in any case to support the caretaker of the bore, and therefore £100 would be left to go towards paying interest on the Government expenditure at Pera. The land there without water would be practically valueless. I cannot tell you, without making calculations, what would be the maximum quantity of water required to irrigate the Government farm and 400 acres of leased land. I think it would be necessary to run the bore day and night to do that. In my opinion the supply now given by the bore will be barely sufficient. I think that the whole outflow of the bore—610,000 gallons a day—could be used without imperilling the supply. We have not tested the outflow with a view to ascertaining if it is diminishing; but it seems to me that the flow in the flume is the same to-day as it was 6 months ago. I am still of opinion that no manure would be required at Pera for some years. Mr. Hersey was speaking probably rather of vegetable plots than of land used for fruit-growing.

*To Mr. Wright:* Fruit properly irrigated will carry quite as well as fruit that is not irrigated.

55 Thomas Whitchurch Seaver, Esq., B.E., Acting Assistant Engineer, Water Conservation Branch, Department of Mines, sworn, and examined:—

*To the Chairman:* At the present time I am acting as Assistant Engineer in charge of the lock and weir at Bourke. My business in the office is designer. I was engaged in the design of that work. The greater part of the lock is now constructed, and, for the last five weeks we have been taking out the silt which was deposited by a flood that broke in when Kerle and Kerle had the contract. I had nothing to do with the fixing of the site of the lock, and I have not seen any of the sites of the proposed locks and weirs, though I am familiar with the scheme into which the Committee are inquiring, on paper. To prevent erosion of the banks, the wing walls are to be carried in 43 feet to meet the hard shale, so that before the work could be interfered with the river would have to wash away 43 feet of soil on either side. Weirs on the Darling should be self-acting, or at any rate movable, for the following reasons: 1st. By lowering the shutters, when there is sufficient water in the river, all obstruction to navigation is done away with. With a fixed weir, of course, all the traffic must pass through the lock. 2nd. It interferes with the normal condition of the river, causing the deposit of silt, as in the case of the Bourke lock, and may, perhaps, change the course of the river. The water coming down the river is heavily charged with silt, and any stoppage of the current, as by a dam, would cause that silt to be deposited. We have a small coffer dam round the works at present in progress, and the last flood filled it right up to the top with silt. A fixed weir would act in the same way. Of course silt has been deposited in the river under natural conditions; but with a high weir I think that silt would be deposited in the bed above it. A fixed weir is more likely to change the course of the river than a movable weir, because at times of flood a movable weir would be lying at the bottom of the river. Of course a fixed weir 15 feet high would not cause any obstruction to a flood 30 feet high; but such a weir would certainly obstruct the water when the

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flood

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flood was only 3 or 4 feet above it. The flood that deposited the silt at the weir below Bourke was only 10 or 12 feet high. Any fixed weir in the river would increase the velocity of the current. Supposing the river were running in its natural condition, 20 feet high, and the velocity were 1 foot a second, if an obstacle was placed in its way the velocity would be increased, and would be all the greater just above the level of the weir, and at a weak part of the bank. That is what caused the scouring at Gin Gin. 5

*To Mr. Black:* The erosion of a bank consequent upon the obstruction caused by a fixed weir need not necessarily occur in the vicinity of the weir, though that is where it is most likely to occur. Of course, the river might change its course any distance back.

*To the Chairman:* With a fixed weir there is a great fall over the top, and that fall will have the effect of undermining the weir. Thus, at a dam on the Cape Fear River in America, 16 feet high with a fall of 10 feet into 6 feet of water, with a bottom of soft shale rock, in the course of a few years a cavity was formed to such an extent that the dam fell into it. The velocity of approach in the Darling is very small compared with the velocity of the fall on the lower side of the weir, and that is why, in designing our weir, we fixed the point of the revolution of the wickets in such a place that the water could not rise more than 15 inches above them. Of course, steamers more than 37 feet wide will not be able to go through these locks, and, if fixed weirs were adopted, could not pass up and down the river at all; but with movable weirs we could let them pass by dropping some of the shutters. I agree with Mr. Darley that when a flood rises to twice the height of the weir, the weir will make very little difference; but when the flood-water was rising it would greatly increase the velocity of the river. Directly the water on the lower side of the weir gets as high as that on the upper side the danger disappears. A fixed weir would not affect the river if the river were running a banker. I cannot say why it was determined to construct the weir at Bourke instead of at the Fisheries, Brewarrina; but the site at Bourke is, I think, the best that could be got. The American authorities say that the damaging effects of a fixed weir disappear when the river rises to twice the height of the weir; but that does not affect the question. The danger exists when the height of water passing over the weir is only 2 or 3 feet. Mr. Darley says that the danger disappears when the river rises 6 or 7 feet above the weir; but I do not think that it disappears until the water has risen nearly twice the height. When there are only 2 or 3 feet of water passing over the weir, there is likelihood of a scour being caused in the bank just above the weir. I do not think that the shutters of a movable weir would be liable to injury from floating timber in times of flood. It would be very improbable that a piece of timber would lodge on the wickets when they were lying on the bottom. In India the rivers invariably silt up above the fixed weirs, and they use scouring sluices to prevent it. Neither do I think that there will be any danger of the submerged wickets being so covered by mud and silt as to make it difficult to raise them. Silt was deposited at the site of the lock because the coffer-dam there acted as a fixed weir. The submerged wickets would cause no obstruction to the flood. The silt at the bottom of the river would be about 3 feet high, and that might cause the river to silt up to the level of the top of the sill; but there would be no mud deposited upon the shutters themselves. Mr. Vernon Harcourt—I suppose the greatest living authority on movable weirs—says that the Chanoine shutter-weir is easily managed, while the success of the system is shown by its extension. The Department had not gone into the question of the Brewarrina weir when I left town. We dealt with Stony Point, Vincent's Rocks, and Beemery, but not with Brewarrina. I understood that the original idea was only to render the river navigable as far as Brewarrina. The design for the Brewarrina weir is, I believe, being prepared now. The average height of the banks of the Darling is about 45 feet, and the river-level, if the proposed scheme is carried out, will be 13 feet from the bed. I do not think that the increasing of the river-level would make much difference to the cost of pumping, though it will decrease the height to which the water has to be raised. With regard to the pumping, I think that in summer-time we could utilise the power of the water falling over the weirs. That has been done with great success in Italy, France, and Spain, and is about to be done in America. When these weirs were first invented, a space of 4 inches was allowed between the shutters, and in dry times they put down planks to prevent the water escaping. We allow only 1 inch between our shutters, and I propose to close the apertures where necessary with a round wooden board loaded with lead. That would give a fall on the lower side of the weir of 8 or 10 feet, and every cubic foot per second of that fall would equal one horse-power. The weir could be made to give, speaking theoretically, 200 horse-power, and it would be very easy to make it yield 30 or 40 horse-power. One of the simplest ways of using up power would be by means of a turbine working a centrifugal pump. In this way you could get practically unlimited power, and more power than you would ever use. Of course when the shutters were down these pumps would not work, because there would be no fall of water; but they could have been working for several months past. Still, if the wickets were down and it was necessary to pump water for irrigation purposes, there would be no difficulty in putting up the shutters for a day or two. We could get a fall whenever we needed it except during flood-time. I do not say that we could work a centrifugal pump right through the year; but we could work such a pump for a great many months in the year. I have estimated that it would cost £600 at each weir to put in turbines and centrifugal pumps. We would have to make a concrete chamber at each weir. 55

*To Mr. Wright:* In this way we could get the water to any height. A cubic foot of water per second will irrigate 100 acres. I could not tell you at the present moment what power would be required to lift an 8-inch column of water 40 feet, but, with a fall of 6 feet, you get an almost unlimited horse-power, or, at any rate, more than you would want to pump the water required for irrigation purposes. Hydraulic rams could also be used. They have been used to pump 400,000 gallons a day. An hydraulic ram takes no looking after, and will work with any head of water. It will deliver one-seventh of the water going through it up to four times the fall. The ram would be placed about 4 or 5 feet from the river-bed. Supposing there were 280 cubic feet of water passing down the river every second, with a 10-foot fall, an hydraulic ram would raise 40 cubic feet a second 40 feet high. Hydraulic rams are now only used for irrigation on a comparatively small scale, and the largest of them only delivers 400,000 gallons in the twenty-four hours; but in America they put in five or six close together. At the present time the river is very low; but there are 250 cubic feet a second going down, and 1 cubic foot a second would irrigate 100 acres. The rams would work until the difference between the level of the water on each side of the weir was less than 2 feet, when they would cease to work. I think that the cheapest way of irrigating would be by utilising the fall in some such way as I have described. This country is very different to the old country, where the seasons are all clearly defined. Out here if you are able to give the subsoil a good 75

good soaking several times a year it does not matter so much when the water is put on. When there was a great deal of water in the river the probability is that the seasons would have been good, and therefore not so much water would be required for irrigation. If it were necessary to irrigate all the year round a steam-engine could be used as well as an hydraulic pump. I think that a turbine and a centrifugal pump would not cost more than £600 or £700 for each one. The hydraulic rams take no looking after, and the men in charge of the locks could attend to the turbines. Mr. W. H. Graves, C.E., one of the prominent engineers of California, says that the utilisation of the water-power of canals is a subject which must claim attention as the country progresses. On the Crappone Canal, in France, which has a capacity of from 350 to 500 cubic feet per second, there are thirty-three mills. On the Marseilles Canal there are 107 mills, and 20 per cent. of the revenue of the canal is derived from these mills. The Verdon Canal, in France, develops 2,000 horse-power; the Henares Canal, in Spain, develops 3,630 horse-power for nine months in the year, and 1,450 horse-power for the rest of the year, and the rent obtained amounts to £1 per month per horse-power. As far as the fall of the water is concerned, the conditions on the Darling would be the same as they are on those canals. I have not had any personal experience of any pumping scheme such as I have referred to, nor have I had any experience in the construction of locks and weirs, except during my connection with the Department in the last six years. My information has been obtained principally from reading, and I have a knowledge of what is being done in other parts of the world. There would be no danger of the pitching in the locks being destroyed by floods. The stones will be very heavy, and besides when there is a flood in the river the bottom velocity is very small. I do not think the scouring in the locks would be sufficient to carry away the pitching, but, in any case, the danger would be greater with a fixed weir. We have provided a concrete apron in front of the weir, standing out about 20 feet. I think that it is perfectly safe to have the locks alongside the weir. That is the practice followed in all the French canals. I would not recommend it if fixed weirs were employed, because I think that they would cause a silting up in front of the lock. I do not think that there is any chance of the locks being injured in flood-time, and we calculated that when the lock-gates were opened and the wickets were down the sectional area would be equal to the natural area of the river. In France and in Spain in some places breast wheels are used; in America they use floating water-wheels in places. I think it would be possible to get sufficient power to irrigate 100 acres of land with hydraulic rams. Up to the present time hydraulic rams have only been used in a small scale. They have given perfect satisfaction when supplying up to 400,000 gallons a day, and Professor Threlfall told me that he did not know of any reason why they should not be used to give a larger supply. The river in which movable weirs have been most successfully used is the Ohio, in America, where the conditions are similar to those of the Darling. That river in summer-time is a chain of waterholes, and in the winter-time there are floods. In America fixed weirs are sometimes made of timber. I think that shutter-weirs are most suitable for a sluggish river. The Darling deposits a large amount of silt, but with a rapid river the deposit is not so great. With a fixed weir they have to use scouring sluices, and, if these are not properly placed, there is a distinct danger of silting. We can easily cause a scour at any place by managing the shutters.

T. W. Seaver,  
Esq., B.E.  
2 July, 1896.

FRIDAY, 3 JULY, 1896.

40 [The Sectional Committee met at the "Royal Hotel," Bourke, at 9:30 a.m.]

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (CHAIRMAN).

The Hon. WILLIAM JOSEPH TRICKETT.  
CHARLES ALFRED LEE, Esq.

THOMAS HENRY HASSALL, Esq.  
GEORGE BLACK, Esq.

15 FRANCIS AUGUSTUS WRIGHT, Esq.

The Sectional Committee further considered the proposed Construction of Locks and Weirs on the River Darling.

Ormond Campbell Macdougall, Esq., Inspector of Public Watering Places, Bourke, sworn, and examined:—

To Mr. Hassall: Only the high land between Bourke and Brewarrina is suitable for an irrigation settle-  
ment. The construction of the weir below Bourke will throw the water back about 20 miles beyond North  
Bourke. North Bourke will, therefore, be a very suitable spot for an irrigation settlement, the only  
better place being at Redbank, about 30 miles below the weir, which is not affected by this proposal.  
About 40 acres have been cultivated at the Native Dog Bore, 17 at Enugonia, 4 at Belalie, and 8 at  
Barrington. Fodder plants were grown first—lucerne, Hungarian millet, sorghum, and maize. Then we  
tried an experimental wheat plot, obtaining 35 bushels to the acre. My district begins at Hungerford, on  
the Queensland border, and from Goodooga it comes into Brewarrina, thence to Nyngan, thence past Cobar,  
and so to Hungerford. It contains an area of about 150 by 200 miles in extent. In my district there are 58  
public watering places (26 bores and 32 tanks). Twenty-four bores and 4 tanks have been constructed during  
my term in this district. In my work of inspection and supervision of these I travel by my own conveyance  
from 5,000 to 8,000 miles annually. It is now between four and five years since the question came up as to  
whether or no the artesian waters in this district were good for irrigation purposes, and I was requested by the  
Superintendent of Public Watering Places (Mr. J. W. Boulton) to lay out small farms at the Native Dog and  
Barrington Bores. This I did to the extent of 4 acres at each place in ¼-acre blocks. I planted sorghum,  
planters' friend, Hungarian millet, maize, and lucerne, and the results were good. Later on an experiment  
with wheat yielded 35 bushels to the acre; this wheat was sown on the 16th June, cut 17th November, and  
received three waterings, the season being dry. Since then both the Native Dog and Barrington Bore farms  
have been enlarged, the former to about 40 acres and the latter to 8 acres. In July, 1893, I laid out  
farms at Belalie and Enugonia Bores, and a larger number of forest and fruit trees were planted  
at those two bores as well as at Barrington and Native Dog Bores, and the results were first-class. The  
Hon. Sydney Smith, Minister for Mines, visited the Native Dog Bore in January, 1895, and I had the  
pleasure of placing before him grapes, peaches, and apricots grown on vines and trees planted eighteen  
months previously. From these different bores I also sent to Sydney very fine samples of water and  
rock

O. C.  
Macdougall,  
Esq.  
3 July, 1896.

O. C.  
Macdougall,  
Esq.  
3 July, 1896.

rock-melons, pumpkins, &c. Water-melons up to 65 lb., rock melons to 25 lb., and pumpkins to 75 lb., all sound and of excellent quality and flavour. The Native Dog, Engonia, and Belalie Bores are on red ground, and the Barrington Bore on black ground, and I may state that I found it harder to keep the black soil in good order than the red. I have heard it stated that artesian water cakes the land after flooding more than other water, but I disagree with this entirely, for by experience I have proved that there is no difference, and that the land, unless cultivated, will cake just as much with rain or river water as artesian. I have also heard it stated that there is a great danger of the artesian supplies giving out. I am, of course, not in a position to state definitely whether that is likely to take place or not, but my opinion is against it, and I am sure that in all cases in this district or Colony that good and sufficient reasons can be given for such happening. My experience, which is, of course, only of from four to five years, teaches me that the artesian water is first-class for irrigation, for at those places named the trees are in as good condition to-day as after their first season. As far as the scheme for locking the Darling between Bourke and Brewarrina is concerned, I am, of course, only acquainted with it from what I have heard and read. I think there can be no doubt as to the usefulness of the work, but as to whether or no it would pay interest, I am not prepared to give an opinion. I think it would enhance the value of the Crown lands for several reasons, viz., regular and cheaper carriage, the filling of lakes, lagoons, and creeks back from the river, and by giving a better chance for irrigation to those who choose to try it; but I am not prepared to say if many or few would take advantage of the water for the latter purpose. Probably some day some pastoralist will perhaps try feeding or fattening stock artificially, and, if with success, others will follow the example. We know that in other parts of the world it is done with success, and it might pay at all events to top them up here by such means, especially if what I have been told is true, namely, that half-a-ton of sorghum hay will feed a sheep for one year, and that 50 tons of such a crop can be grown per acre, for if half-a-ton will feed a sheep for the year, a large number per acre could be topped up. I have never seen any artificial feeding done, for all my experience amongst stock has been on the Darling River, and the country west and north of the river. I know that it is only of late years that residents of the western district have thought of cultivation in any way, but they are now finding out the benefit of growing crops and they may perhaps by-and-bye consider it worth while to go in for cultivation on a large scale, but whether by artesian or river water depends upon the position of their land. Apart from cultivation or irrigation I consider the locking of the Darling a great work, for, during my thirty years experience in this and the Wilcannia districts, I have known the people to be at pretty well starvation point and consuming such bad flour that in ordinary or good times they would give to the pigs, for it generally happens that a low river and bad season come together, and at such times land carriage is very high. I have known flour at Wilcannia to be as high as £100 per ton and potatoes 1s. per lb. I have seen the Darling about there so low that you could walk for long distances in the bed of it, and I have seen fish dead in thousands, and stacks of wool on the banks and in sheds for two years. I do not look upon irrigation from the river or artesian bores as in any way antagonistic to each other, because cultivation at the bores can be carried on where water from the river could not be forced to. I think if more cultivation was carried on at the different bores it would tend to cheapen land carriage, because under existing circumstances in a dry season, a carrier taking, say, 6 tons of loading would probably put on as well 2 tons of fodder. Whereas if he could rely upon gathering what he wanted for his team along the road at fair prices, he could put on a full load for freight. The primary object for putting down bores has of course been to water the travelling stock routes, but as the supply is far in excess of the requirements there is no reason why the water should not be used for cultivation purposes. I have had to pay as much as 4d. per lb. for chaff and 25s. per bushel for oats at Wanaaring. We have a bore at that place with a flow of 400,000 gallons of good water, and therefore cultivation at that bore would necessarily cheapen horse-feed, and the same can be said of many other places. The bores that I have mentioned, viz., The Native Dog, Engonia, Belalie, and Barrington, are now leased at £90, £52, £25, and £40 respectively. I have a fair knowledge of the country along the Darling from Brewarrina to Wentworth and think most of the country between Bourke and Brewarrina very subject to flood; the best land in my opinion is just beyond North Bourke; there is also a fine lot of land at Redbank, but that is of course below the lock now being constructed. With reference to the diminishing of artesian bores, I may mention three bores that have diminished in flow, viz., Wongomana Station Bore, Yantabulla Government Bore, and Coomba Station Bore. In the Wongomana case the bore was put down to a depth of 1,400 feet, the water was struck at 1,200, and the casing put down nearly to the bottom, therefore partially shutting off the supply, I am certain if the casing was pulled to just above water-level the bore would flow as at first. In the Yantabulla case the original supply was 67,000 gallons, and has diminished, but the bore was put down in mud spring country and the water I am sure is escaping and going past the bore. In the case at Coomba, the water was struck at 2,100 feet and the bore eased to 1,200; the bore filled up and choked. It was then cleaned out and cased down to the water, and has been running for the last five or six years at the original flow of 3,000,000 gallons, the figures above are as they were given to me, although I cannot vouch for their accuracy, I think they are correct. The produce raised at the various bores is either used there, or sold to carriers and others passing by, or to people living in the towns in the vicinity of the bores. At Barrington the bore is leased to the late caretaker, at a rent of £40 a year. He collects the watering fees. There are over 400 acres of fenced land there, the farm containing 8 acres. There is a great deal of stock travelling that road, but they water at the Warrego in ordinary times. Before the bores started there was very little irrigation; but now many squatters go in for it. A few irrigate, but as a rule, they chance the seasons. Thousands of tons of fodder brought here by rail go out to the back country. The producers at the bores might more than supply the travelling public; but not all the station demands. The stations in time will probably supply their own wants. There is very little demand for land in the neighbourhood of the Government irrigation bores, on the roads leading towards Queensland. There would have been more demand for land at Pera, had there not been an unfounded report in circulation that the flow of the bore has fallen to 100,000 gallons daily. In my opinion the flow has not diminished in the least, nor is there any likelihood of a diminution. Most of the Government bores are shut down, but owing to bad territory we cannot shut some of them down. One at Barrington, when shut down, burst out 90 feet away, and so did that at the Native Dog. There are contracts at present let for about six bores. People are always anxious to lease the bores, but the term of five years is regarded as too short. With a longer term the applications would increase. It would be better, in my opinion, to allow the lessees of bores to hold

hold 40 acres as a permanent lease, and the balance on an annual occupation lease, in order that other applicants for land might not be excluded.

To Mr. Lee: In my opinion for many years in this district irrigation by means of artesian water will continue to develop, and after that it may spread to the river banks.

O. C.  
Macdougall,  
Esq.  
3 July, 1896.

5 William Poole, Esq., Assistant Engineer, Water Conservation Branch, Department of Mines, sworn, and examined:—

To the Chairman: I am in charge of the weirs and the works in Macquarie district. Previous to taking my present position I made extensive surveys in connection with the proposed locking of the Darling between Wilcannia and Menindie, and Bourke and Brewarrina. The reasons why Bourke was chosen as the site for the first lock and weir were, so far as I know, that water might be provided for an irrigation settlement at North Bourke, and that an experiment in weir construction might be afforded, to ascertain the difficulties likely to be met with and the cost of the work. When the Walgett River gauge reads 9 ft. to 9 ft. 6 in. light-draught steamers can navigate from Walgett to Brewarrina. This height of river will enable steamers to pass the Collawaroy Rocks. Steamers can navigate from Brewarrina to Bourke when the official gauge height at Brewarrina is 8 feet. The river at Brewarrina has to be 18 feet on the official gauge before steamers can pass the Fisheries (Brewarrina Rocks). The following table shows the state of navigation of the Darling between Bourke and Walgett during the years 1891 to 1894 inclusive:—

W. Poole,  
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Year.	River Darling Open for Navigation.		
	Bourke to Brewarrina.	Brewarrina to Walgett.	Across the Fisheries at Brewarrina.
20 1891 .....	31 weeks .....	34 weeks .....	20 weeks.
1892 .....	28 " .....	29 " .....	18 "
1893 .....	52 " .....	50 " .....	25 "
1894 .....	38 " .....	36 " .....	23 "

Taking the wool season as being August to November inclusive, or about seventeen weeks, the Fisheries could be crossed by steamers during that period for nine weeks in 1891, fifteen weeks in 1892, nine weeks in 1893, and four weeks in 1894. From the foregoing figures it will be seen that the period during which steamers and barges can cross the Fisheries, is but a small proportion of the time that the river is open to navigation from Walgett to above the Fisheries, and from below the Fisheries to Bourke. It is thus seen that the Fisheries cause a great obstruction to the free navigation of the river between Bourke and Walgett, necessitating during the busy wool season a transhipment of goods at Brewarrina. Firms or owners of single steamers are then precluded from enjoying the full benefits of trade between Bourke and Brewarrina. The navigation heights of the river have been ascertained from various river captains trading on the river. The periods of navigation have been ascertained from the navigation heights and the river height record in the Annual Rain, River, and Evaporation Reports issued by Mr. Russell. There are very few steamers trading on the western system of rivers Murray, Darling, Murrumbidgee, &c. that will be unable to pass through the Bourke Lock, the steamer "Florence Annie" being the only regular trader to Bourke that cannot do so. The overall measurements of a large number of the steamers and barges were taken by myself and transmitted to the Chief Engineer. It is not likely that there will be any increase in length and breadth of craft now trading on the river, the narrow tortuous course of the river precluding such increase. During my experience on the river in selecting lock sites, surveying its course, and in taking soundings along its bed, I have had opportunity to see the river in all its stages, from extremely low to flood. The Darling carries but little floating timber or other debris, and during the period which the shutters of a movable weir would be in operation, that is, raised, I have not seen a single piece of timber floating in the river. During the flood of May and June, 1894, I travelled by steamer from Wilcannia to Bourke, and had ample opportunity of observing the river; but very few floating logs were seen. During those periods, when the shutters of a movable weir would be raised, the river water is generally perfectly clear, carrying no silt in suspension. A small amount of sand would, however, be rolled along the bed of the sandy reaches. There are many rock and other hard bars of varying height in the bed of the Darling which act as weirs. The highest and best known of these natural bars is the Fisheries at Brewarrina (known also as the Brewarrina Rocks or Brewarrina Falls). During periods of very low river the Brewarrina Rocks maintain the water in the river above them at a height of about 11 feet above the water below them. I have carefully examined many of these natural obstructions, most of them by survey, and find that on the up-stream side of all of them there is a long deep hole, in some cases more marked than in others. In no case have I found the river above these obstructions silted up level with them. The following are the principal obstruction that have been examined by me, Brewarrina Falls, Stony Point, Vincent Rocks, hard bar, just below Bourke wharf, Wilcannia Rocks, Eight-mile Point Rocks, Culpaulin Rocks, Christmas Rocks, and a hard bar at Mulcrenery. Some of these rock bars have a narrow passage past them, cutting into one of the banks; but as these small passages silt up during fresh, and only wash out during very low stages of the river, they cannot in any way affect the silting up or scouring out of the large holes which often extend for many miles above the bars. In many cases there is a large deposit of sand in the reach just below many of these rock bars. This is notably the case at Brewarrina Rocks, Wilcannia Rocks, and Eight-mile Point Rocks. Strange to say, the finding of these large holes above the natural bars on the Darling, is contrary to the experience on Indian and most other rivers. The rivers in India and most other countries, are, however, of a different nature to the Darling; they are in comparison, broad, shallow, and with one or more main channels, which shift about within the banks. The Darling is a narrow stream, with a single channel, that is (excluding flood-channels), with deep well-defined banks, which for hundreds of miles vary but slightly in their width apart. The water of the Darling being confined within one well-defined deep channel, is able to keep its bed clear of deposit down to its normal hydraulic bed-level. The silt carried in suspension by the waters of the Darling is of a very fine sandy nature. In case some or most of the lowered shutters of a movable weir are covered by silt the raising of one shutter would cause a scour round its sides, which would soon clear the next shutters of any deposited silt, the

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the next shutters could then be raised and the washing-out process continued and so on until they are all raised. As the sill of the weir will be raised somewhat above the bed of the river it is not very likely that any deposit of silt will take place upon the lowered shutters. In case a channel is cut across a bend and a lock placed in it, the lower end would soon silt up unless a large amount of water is allowed to pass through this cutting. This is seen when the river cuts a new channel for itself across a bend; the two ends of the deserted bed soon silt up, whereas the rest of the old bed, now a lagoon, may remain fairly deep for many years. Examples of this are numerous along the Darling River. The material of these large bends is usually of a very fine silty nature; this has been ascertained by trial bores put down under my supervision. There are many lagoons between Bourke and Brewarrina which can be dammed and utilised for storage for irrigation in the same manner as that at Yambacuna visited by the Sectional Committee. These lagoons usually abut on to land which is equally suitable for cultivation as that at Yambacuna. The most suitable site for irrigation is the large extent of red-loam country which comes on to the river at North Bourke. There is a very large area of this soil which could be made use of. It is also so situated that water could be conveyed on to the highest ground by means of fluming, &c., at no great outlay or trouble. The pumping station could also be located that it could be protected from the highest flood at a small cost. Although this high red country adjoins the river, there is, except at the Bourke Bridge a narrow strip of flooded land between the river bank and the red loam which is above flood-level. The whole area of the red loam above referred to, is above the highest flood-levels. This is the only place between Bourke and Brewarrina, that is above maximum flood-level. The country at North Bourke is by comparison, generally of a higher class than that at Mildura, while the former is covered by scrub which would admit of inexpensive clearing, as compared with the mallee that exists at Mildura. The land at North Bourke is slightly undulating, but will not require the high pumping lifts that exist at Mildura. The greatest height to which water would have to be pumped at North Bourke would probably not exceed 50 feet above summer level, this height will, on the completion of the Bourke weir be reduced to about 40 feet as against 75 feet at Mildura. The extreme left might be made in one lift, with one pumping station only at North Bourke as against several lifts at scattered pumping stations at Mildura. I spent a week at Mildura, and had an ample opportunity of examining the place and comparing it with other localities on the Darling, with which I was acquainted, suitable for irrigation. Most of these places on the Darling, in soil, and in natural features for water distribution compare most favourably with the irrigation settlement at Mildura. There are places along the Darling where the red loamy country, which is above maximum flood-level, is touched by the river. At these places there is an almost unlimited extent of country which is eminently suitable for irrigation settlement. There are places between Bourke and Brewarrina which are only covered by such extreme floods such as those of 1864 and 1890, floods which occur about once in twenty-five years. These places are between the mouth of the Waraweena Creek and mouth of Culgoa River, on Quantambone, about 4 miles above Becnery, and at several places on the right bank of the river a few miles below Brewarrina. Beside these places there are many patches of country such as that at Yambacuna where cereal and fodder culture could be carried on; these latter places are only covered in high flood.

[3 diagrams.]

PLAN I.

DEPARTMENT OF MINES  
WATER CONSERVATION

# LONGITUDINAL SECTION

OF

# DARLING RIVER

SHOWING PROPOSED SYSTEM OF

# LOCKS AND WEIRS

FROM BOURKE TO BREWARRINA

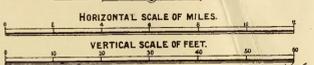
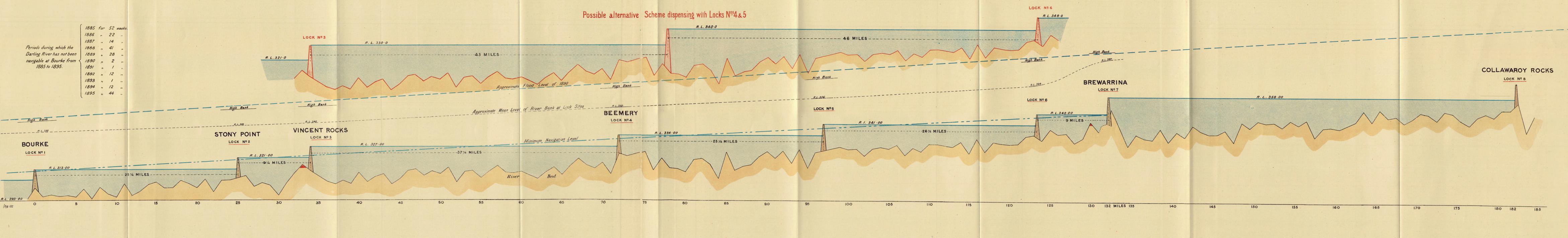
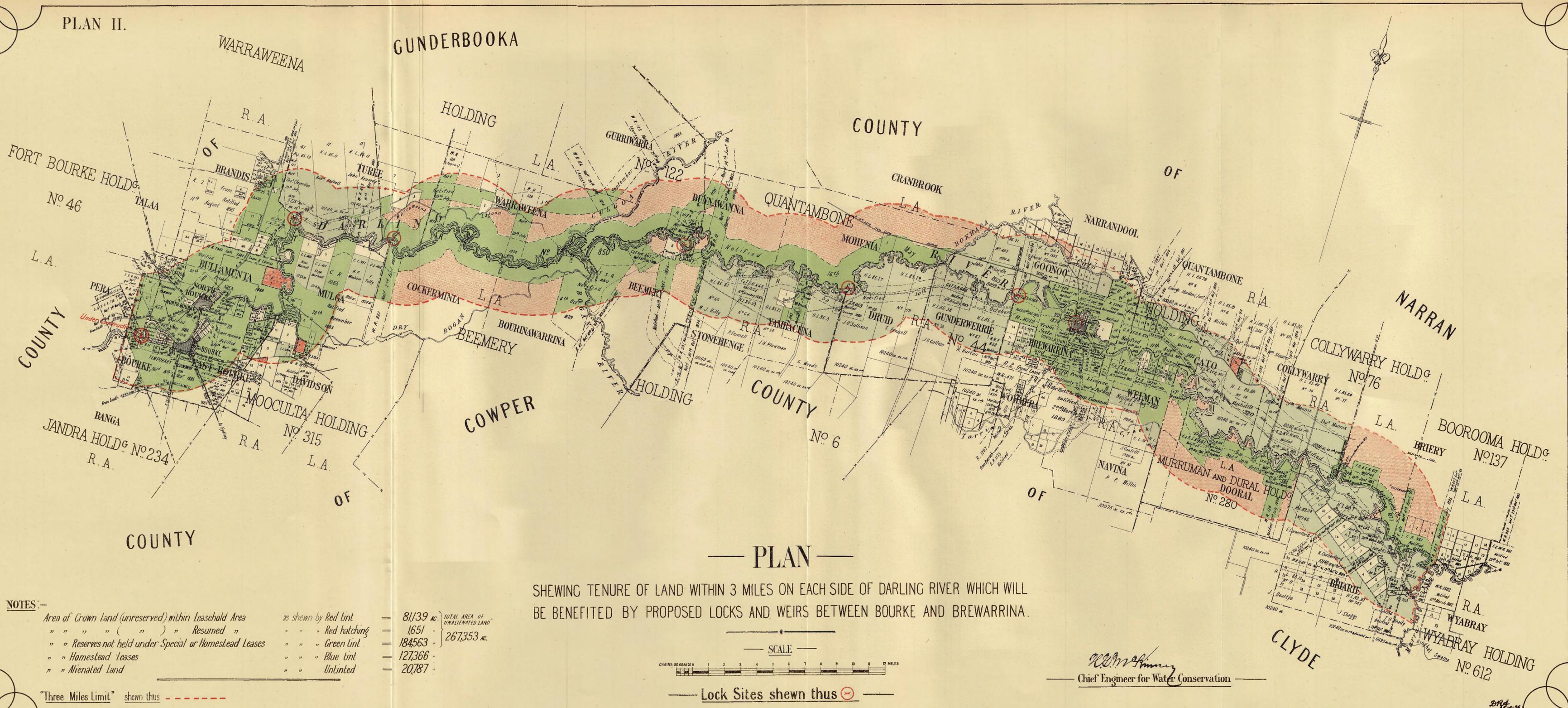


PHOTO-LITHOGRAPHED AT THE GOVERNMENT PRINTING OFFICE, SYDNEY, NEW SOUTH WALES.

*W. C. ...*

*R. L. ...*

PLAN II.



— PLAN —

SHewing TENURE OF LAND WITHIN 3 MILES ON EACH SIDE OF DARLING RIVER WHICH WILL BE BENEFITED BY PROPOSED LOCKS AND WEIRS BETWEEN BOURKE AND BREWARRINA.

NOTES:—

Area of Crown land (unreserved) within Leasehold Area	as shown by Red tint	= 81,139 AC.	TOTAL AREA OF UNALIENATED LAND = 267,353 AC.
" " " " " " " Resumed "	" " " Red hatching	= 1,651 "	
" " Reserves not held under Special or Homestead Leases	" " " Green tint	= 184,563 "	
" " Homestead Leases	" " " Blue tint	= 127,366 "	
" " Alienated Land	" " " Untinted	= 20,787 "	



Lock Sites shewn thus 

*A. M. S. Finlay*  
Chief Engineer for Water Conservation

"Three Miles Limit" shewn thus 

1896.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

**THE RIVERS MURRAY AND DARLING.**(PETITION FROM CERTAIN RESIDENTS ON, PRAYING THAT THE RIVERS BE KEPT IN A FIT  
CONDITION FOR NECESSARY TRAFFIC.)*Received by the Legislative Assembly, 28 October, 1896.*

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales.

The humble Petition of the undersigned residents on the rivers Murray and Darling,—

RESPECTFULLY SHOWETH:—

1. That the present condition of the rivers Murray and Darling within this Colony, owing to the accumulation of snags, is neither safe for navigation nor compatible with the just claims and interests of your Petitioners.

2. That during the last fifteen years nothing has been done by the Government to keep the rivers in a fit condition for the necessary traffic.

3. That during the above term mentioned large sums of money have been collected through the several Customs Houses, from goods carried on the rivers Murray and Darling, and that the beds of the rivers are being filled up with trees and snags impeding navigation, and unless the rivers are in half-flood navigation is unsafe, and if compelled to carry by land the cost of carriage would be a very high rate and the delivery uncertain.

4. Your petitioners, therefore, pray that your honorable House will be pleased to cause such steps to be taken as will most effectually remedy the evils complained of.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 107 Signatures.]



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

**WHARFS, JETTIES, &C., AT NEWCASTLE.**  
(RETURN SHOWING THE REVENUE AND EXPENDITURE DURING THE LAST TWENTY YEARS.)

*Printed under No. 7 Report from Printing Committee, 2 July, 1896.*

*[Laid upon the Table of this House in answer to Question No. 1 of 26th May, 1896.]*

Question.

- (1.) WHARFS, JETTIES, &C., AT NEWCASTLE:—MR. T. R. SMITH *asked* THE SECRETARY FOR PUBLIC WORKS,—What amount of money has been expended on wharfs, jetties, &c., at Newcastle, during the last twenty years; also the amount of revenue received during the same period for wharfage dues, &c., at Newcastle?

Answer.

Expenditure, £189,113. Revenue—Wharfage rates, £16,750 3s. 2d.; tonnage rates, £114,046 12s. 4d. Total, £180,796 15s. 6d.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

**GOVERNMENT LABOUR BUREAU.**

(ANNUAL REPORT FOR YEAR ENDING 17TH FEBRUARY, 1896.)

*Printed under No. 1 Report from Printing Committee, 21st May, 1896.*

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The Superintendent, Labour Bureau, to The Minister for Labour and Industry.

Sir,

I have the honor to submit the fourth annual report of the Government Labour Bureau, from 18th February, 1895, to 17th February, 1896. In doing so I regret to report the depression mentioned in my third annual report still exists in the industrial life of the Colony.

Want of employment has been keenly felt by a great many during the past year. It has not, however, proved peculiar to this Colony. The wave of depression which has been passing over this and the other colonies during the last five or six years has not yet expended its disastrous force, the effects of which have proved severe on all trade, commerce, enterprise, and investment, with the result that labour and industry have felt it most.

The severe drought experienced during the latter part of 1895 had also disastrous effects, especially on the labours of those employed in mining, farming, and pastoral pursuits. Conditions have somewhat changed, however, and the prospects of the future are brighter. The copious rains which have been general throughout the Colony during the last month will be of immense benefit, and (if you will permit me to state) with a fixed policy let us hope matters will improve. More confidence will ensure more trade and create more employment for the people. There can never be true prosperity with thousands of unemployed in our midst.

The thirty-five agencies which you established in the principal towns of the Colony on the 1st March will enable the head office to acquire a better knowledge of the unemployed question in the country, and will assist in decentralising the operations connected with solving the unemployed problem, than which there are few questions (if any) of greater importance at the present time. Public meetings, conferences, organisations of the unemployed themselves, and numerous writers in the Press have endeavoured to solve this most difficult question. Many of the suggestions were impracticable, and many were chiefly appeals to the Government to employ them on the lands and public works, which would prove but a temporary relief, and would tend rather to aggravate than permanently solve the difficulty.

The best remedy or scheme propounded, in my opinion, is that of water conservation and irrigation, which was referred to in my report of 1893.

A general scheme of water conservation and irrigation (as adopted in other countries) would be best if designed in districts in those dry portions of the Colony where it is necessary. The work could be carried out in sections, by gangs of men under strict supervision. Tools and plant could be furnished by the Government, and charged for or rented.

With a view of making this a scheme for permanently settling the unemployed on these lands, and establishing thereon homes for themselves and families, all those employed on the general scheme would receive a lease of sufficient area (say 30 to 50 acres) to maintain his family. The said land to be part of, and irrigated with, the district scheme. Payment would be by day wages or by piece-work where possible, and as may be agreed upon. Each man, or gang of men to work in periods of one month on the scheme, and one or two weeks on his own selection, improving and cultivating it, and making his future permanent home. Some little assistance may be required at the beginning. Such a scheme of irrigation would afford industrious men with energy and perseverance an opportunity to succeed. And when the scheme is completed (if not before) thrifty men from the ranks of the unemployed should be independent of Government relief, and in a short time should become successful and permanent producers, cultivating what they have by irrigation converted from a barren to a fertile soil.

A thorough and efficient scheme of water conservation and irrigation would no doubt be costly; yet its results would be so beneficial (as great as those already achieved in other countries) that it is almost needless to add the Government would be recouped, and hundreds of thousands of acres of land now barren and useless would be rendered fertile and productive, rearing, on its richness, settlement it is now unable to induce.

A scheme called "Homestead Association," for absorbing the unemployed on these lines, is in operation in the Colony of Victoria. The work on which they are employed is the draining and reclamation of swamp lands. The men are employed every alternate fortnight on the Government works, and a fortnight on their own selections, improving same. The following is an extract of a report on the above subject forwarded to the Honorable the Minister in 1895:—

"These exist chiefly where there is some Government work proceeding. At present there are a number of associations which surround reclamation works carried on by the Government in drainage, &c. The settlers get a fortnight's work on Government works at drainage at so much per yard, and are able to earn about from 35s. to 50s. per week, and every alternate fortnight must work on their selections in improving same. This system, I am informed, is very successful, where it can be carried out; and report speaks very favourably of a number of such settlements."

Before leaving the subject of irrigation and water conservation I may give an illustration in a small way of its beneficial effects. During my visit to the Bourke district recently I had an opportunity of seeing the Pera Bore, situated on the Wanaaring Road, about 9 miles from Bourke. It is on a block of 640 acres of Crown land—rich chocolate soil, and with an abundance of water will grow anything. Raisin-making, among other industries, should prove to be profitable work in the future here, as the general conditions of soil and climate appear to be naturally suited for it. There are hundreds of thousands of acres of this rich agricultural land in the Western District held as pastoral runs for sheep which, if irrigated, would produce sufficient crops of cereals and all kinds of fruit to supply almost the whole Colony, while the local consumption alone, of forage in times of drought in the surrounding districts would prove a source of considerable income. The small irrigation farm surrounding the Pera Bore is certainly a splendid object-lesson.

The Government is farming about 57 acres out of the block of 640, and, though only commenced some twelve months ago, the greater portion is cleared and planted with a variety of crops. The fruit-trees will in a short time give a prolific yield. The greater portion of the area is cut up into 20-acre lots, which can be taken up on a perpetual lease at a rental of £5 per annum for the first five years and £10 per annum after. Several of these lots are already taken up. Houses have been erected, and clearing, fencing, planting, &c., are going on. Each lessee is entitled to 21,000 gallons of water daily, which is carried in flumes over the selection. The effect of plenty of water on this rich soil in this warm climate is really wonderful. Once the rough work of clearing, &c., is done, the rest is comparatively easy. All that the lessees have to do is to till, plant, &c., keep the land clear, and look on the crops growing. To an industrious man with a family, life could be made easy, comfortable, and independent. The land at present will only carry on an average four to five sheep to the acre, giving a return of from 10s. to 12s. 6d. per acre. With irrigation the same land will give a return of from £10 to £20 per acre, and even in some classes of produce, &c., as high as £40 if markets could be found. This would open up a large and profitable field for employment.

In my interview with Mr. Jefferson, who is in charge of the Government farm and bore, he spoke very hopefully of the results he anticipated from this experiment. He has had some thirteen years' experience in irrigation in California, where, he informed me, there were immense areas of land similar in soil and climate to those of the west which, by irrigation, had become productive, and were enhanced in value from a few shillings to from £20 to £40 per acre.

I sincerely believe from what I have seen and read of what irrigation has done that while the outlay of bringing into operation a comprehensive scheme of water conservation would be necessarily large, ultimately the increased return from the land would, as I have already stated, recoup the Government amply, and give employment and help to settle an army of willing workers who at present find employment difficult to obtain, and who only want the opportunity to establish happy, peaceful, and independent homes throughout the western parts of our Colony.

I might also be permitted to mention another work which, if the Government thought wise to carry out, would absorb and permanently settle on the lands of the Colony a large number of unemployed. I refer to the clearing of scrub lands in the Bogan district. There are thousands of acres of rich agricultural land in that district so densely covered with scrub as to prevent it being utilised for settlement in consequence of the heavy cost of clearing, &c. If this work were carried out on the same lines indicated for irrigation it would achieve a like beneficial result. Works of this character would open up vast areas of country for settlement, and would necessitate roads or light railways. The latter, so often spoken of as being urgently required in many parts of the Colony, could be carried out by the unemployed on the same scheme of settlement as already described. If these works could be put into operation it would absorb all or most of the unemployed able and willing to work, and at the same time give them the opportunity of becoming individually useful and independent colonists.

Unfortunately, in addition to those of the unemployed able and willing to work, there is a large number roaming about the city and in the parks—anywhere but earning or endeavouring to earn their living—a class who do not like work, and apparently never intend to do any if they can help it. These ne'er-do-wells are to be found in all large cities. In prosperity or adversity we have the loafer, who too often through the use of strong drink and other bad habits and associations has lost his self-respect and manhood ;

has

## 3.

has degenerated and become a disgrace to his fellow-man and a nuisance and danger to society. I regret to say (and it may be considered harsh, but it is nevertheless true) that this class is encouraged in laziness and idleness by mistaken charity. These are the men who give the most trouble at the Bureau; and there is only one way of correctly dealing with them—they must be either made to work or starve. They have the excuse in times of depression that they cannot get work; but when it is provided for them they refuse to accept it. These are the men who should be placed where they would be compelled to earn their living. These remarks do not apply to the men who accept work at the Church and School Lands at Randwick, or the relief works at Centennial Park.

The best remedy I can suggest for the loafing class is the establishment of Industrial Homes, such as are in existence on the continent of Europe, especially in France, Germany, and Holland, where, as a recent traveller from Australia on the Continent remarked, "a beggar is not to be seen in the streets," the established "Homes" leaving to their choice the two alternatives already suggested—work or starve.

A system of this kind is in operation in Victoria. It is called "Labour Colonies," and was referred to in my report to the Hon. the Minister, in June, 1895, on the unemployed in Victoria, of which the following is an extract:—"In Victoria 800 acres of land are set apart, and any man, instead of becoming a vagrant or a loafer, can apply to be sent to one of the colonies, where they get shelter and are fed; but must work and obey the regulations. They get 1s. 6d. per week wages, and are fed at a cost of about 2s. 6d. per week, for which each man cultivates the land given. All varieties of vegetables are grown, which are sold and go to support the colony. They can leave when they like, and if they can secure work elsewhere are assisted to it. Employers apply for men who have been on the settlement for some time and give evidence of their ability to work for their living. Thus they come and go, and the city is relieved of a large number who otherwise would be leading a life of idleness—begging, and perhaps stealing for a living, and who have thus the means of keeping them from roaming about the streets, and in many cases of becoming again respectable citizens."

There is also a considerable number of old men in and around the city and suburbs who are past heavy manual labour, but who are able to perform light work for a living when they can get it. Many of these have families to support, and notwithstanding the severe criticisms passed on the sand-shifting in levelling the land for building sites at Centennial Park, to these, and to a large number of professional men (clerks, accountants, engineers, shopmen, &c.), unable to do hard manual labour, it was simply a "Godsend" during the severe winter months of last year. Without this work they and their families would have starved, or have borne the reproach of living on charity as paupers. No doubt abuses crept in (but none of a serious nature) through numbers of undeserving men who managed by misrepresentations to get on to the relief works. But hundreds of deserving families sincerely and thankfully appreciated the action of the Government for providing them with the means of earning a living at a time of such great distress.

I am still strongly of opinion it is much better for themselves and the country generally that these old people should be provided with light work (where practicable) than to be separated and relegated in their old days to pauper asylums.

### Fossicking.

The number of men sent out fossicking for the year ending 17th February, 1896, was not so great as that of the previous year, chiefly owing to the drought, it being of little use as an industry without plenty of water. Several of those who were doing fairly were compelled to cease owing to this. The late rains have, however, again given an impetus to this industry, and at the present time there is a considerable increase in the number of applicants going fossicking. The number sent out this year amounted to 7,093, as against 10,718 for the previous year, being a decrease of 3,625 for this year.

Fossicking as a recognised industry has been in operation for a little more than three years, during which time no less than 22,327 men have been assisted and sent out. Many of those sent out have done well; others fairly well; while others, again, have made "tucker," as they say themselves. A large number of them have combined fossicking with other work, and, settling down, have sent for their families, and have made homes in the country. In this way from 600 to 700 families have been sent to join them. It will be noticed that the value of gold won in the Colony since the fossicking system was introduced by the Bureau has been steadily increasing, as the following large totals will show:—

Year.	Oz.	Value.	
		£	s. d.
1891 .....	153,336	558,305	12 3
1892 .....	156,870	569,177	17 4
1893 .....	179,288	651,285	15 8
1894 .....	324,787	1,156,717	7 7
1895 .....	360,165	1,315,920	0 0

Although comparatively few miners' rights issued on credit have been paid for, the owners of them have been to a large extent able to purchase rights in the following years, and so obtain the necessary title to work their ground, thus also increasing the public revenue to an extent it would not otherwise have been. The unemployed fossickers who have been at all successful have greatly relieved the strain upon the public purse, and have benefited themselves and the Colony generally.

### Wages.

The Bureau does not interfere in the rate of wages or terms of employment. All it does is to bring employer and employee together, leaving it to the parties themselves to make their own arrangements; but from the numerous letters received from employers who require labour, and stating the wages they will give, it is evident there is a tendency to reduction in some of the callings. All applications for labour from employers in the country will in future be referred to the agent of the district; and if he is unable to supply the demand the head office will endeavour to do so.

### Refunds.

### Refunds.

The amount received as refunds of railway fares this year is £4,235 19s. 6d.—nearly double the sum received the previous year. This is chiefly owing to the large number of men sent forest-thinning, whose fares were deducted from their earnings. The total sum refunded is £10,526 1s. 3d. This is from the time the refund system was first inaugurated—a period of three years and six months—and speaks well for the large number of men assisted and sent to work. There is, as might be expected, a large amount still owing—over £40,000. Every opportunity is taken of collecting arrears of payments, by the frequent issue of circulars. The country agencies will in future assist in this direction where possible.

### Relief.

Relief work has been a very heavy item in connection with the Bureau during the year. The levelling of the land for building-sites at Centennial Park was commenced in March, 1895, and was originally intended to give relief to the destitute unemployed—clerical and professional men who were physically unfit for hard manual labour. Last winter proved to be one of the most severe ever experienced in the Colony, and employment was very scarce. In consequence the rush for work at the park was enormous, and trebled all anticipations. The general drought of last year was also a considerable factor in the increase of unemployed on the relief works, and, as a consequence, the average number working at the park increased from 1,000 to 2,500 per week. In the depth of winter as many as 1,500, and sometimes over that number, were working daily for rations and rent. With such a large number to manage and control (many of them the worst characters in the country), the task at times proved very trying and even dangerous—taxing the patience, temper, and tact of the Superintendent and staff to the utmost degree. With such a number, naturally, abuses of a minor character crept in, but were speedily expelled. Pressure and influence were brought to bear in many instances in favour of persons who had been proved undeserving, and I was frequently subjected to abuse by those who should have known better, for endeavouring to do my duty in carrying out the instructions of the Minister. When men were allowed to work for rent a rush was occasioned by single men and others who were undeserving and unworthy. Notwithstanding systematic inspection, a number of these contrived by misrepresentation and falsehoods to get on to these works for a short time. Many of them sold their rent and ration orders to raise money which no doubt was spent in drink. Owners of property and others of sufficient means would appeal to be allowed to go to the park for rations and rent, and, when refused, it was really surprising the numerous letters these people would produce from well-meaning citizens in their favour, clearly showing how easily a large section of the best and most charitable in the community are deceived by such characters as these.

My experience in the administration of Government relief has proved beyond doubt that it is not those who are loudest in their cry for work, or those who make the greatest demonstration for Government relief, are the most deserving. Large numbers of married men with families—men who by some unfortunate cause, retrenchment, accident, or sickness, are suddenly reduced to poverty, and whose habits and callings to a large extent unfit them for the rough and tumble of life—are ashamed and often too proud to beg, and will suffer privations almost to death rather than seek charity. Hundreds of these, unable to obtain clerical or light employment, gratefully availed themselves of the provision the Government had thus made (even though temporarily) to enable them to earn a living for themselves, their wives, and children, and to secure shelter over their heads during the severe winter months, without incurring the taint of pauperism.

In addition to the Centennial Park relief works, extensive ones were and still are being carried out by the Government, such as those on the Church and School Lands at Randwick, which has afforded work to thousands. It is being done by piecemeal, and although the wages earned by a large number are not great, it is because those employed were not used to or capable of doing the work. The prices paid are pronounced by experts to be fair, and good men accustomed to the class of work should be able to earn from 5s. to 7s. per day. Numerous additional works were carried out by the Government chiefly in the interests of the unemployed, as will be seen by the attached tabular return. Referring back to the works in connection with the Church and School Lands at Randwick, it may be mentioned that not more than two-thirds of those selected fortnightly turned up at the works to start. Many of them preferred to go to the park for rations.

Over £6,000 were expended in giving a week's wage work to married men and three days to single men as assistance during the Christmas season, £2,000 of which were spent through the Bureau, who afforded single and married men work at the park at 5s. per day. I know this proved a very great benefit to hundreds of families, while a few of the single men made irregular use of it, and would have been better without.

### Expenditure.

The year has been characterised by an unusual amount of agitation (clamour and noise), by a section of the unemployed and others, as to how little the Government were doing on their behalf, and what they should do. As a refutation to much of what has been said, I have prepared a tabular return showing the different works that have been commenced, and the expenditure incurred thereby, for one year, in the interest of the unemployed. Most of these have been carried out by the Bureau and the others by the Works, Mines, and Railway Departments, by men selected by the Bureau. In addition to those classified, there have been other Government works to which large numbers of men selected by the Bureau have from time to time been sent. I am convinced I am right in saying that no other Colony, or all the Colonies put together, have done as much to alleviate the distress of the unemployed in one year than New South Wales. By the tabulated statement referred to it may be seen that the expenditure on works in aid of the unemployed for the twelve months ending February, 1896, is set down at £201,591 4s. 1d., made up in sums respectively as follows:—Centennial Park Relief Works: £30,131 1s. 2d., which includes cost of rations worked for, restaurant meals, rent disbursements, and special work on wages during Christmas season, when £2,000 were expended at the park. Other special wages work done during that season amounted to £4,113, and included improvements to Art Gallery approaches, Cockatoo Island, Shea's Creek, Bunnerong Road, Church and School Lands, Botany Wharf, and Berowra Road. The expenditure on other works during

during the twelve months (paid for by day labour and piecework) is £64,899 3s. 8d., and includes Church and School Lands, Shea's Creek, Rozelle Bay, Woolloomooloo Bay, Muddy Creek, Cook's River, and Temora Road. The amount expended in free rations for urgent and special cases is £493 15s. 4d., and that for night shelter £231 12s. 9d. Fossickers' rations came to £41 18s., and were only granted to those applicants who were without means to purchase any. Special grants to municipalities for necessary works and to benefit local destitute unemployed amounted to £1,710 2s. (which sum, being supplemented by the respective Councils £1 for £1, represents double that amount), and includes the following places, viz., Greta, Waratah, Plattsburg, Hamilton, Adamstown, Merewether, Carrington, Wickham, Raymond Terrace, New Lambton, Lambton, Wallsend, Stockton, Broken Hill, West Maitland, East Maitland, Goulburn, Singleton, Liverpool, Smithfield, Fairfield, Lithgow, Queanbeyan, and Bourke. The whole of these municipalities were visited by me, under instructions, during the year, and the circumstances of the distressed unemployed were in each case reported to the Minister.

The cost for passes by rail and steamer this year amounts to £19,023 3s. 4d., of which £4,057 12s. 2d. has, so far, been refunded, and payments in reduction are steadily being made by many of those so assisted. The amount set down for forest-thinning is £50,000, and the special arrangements made, whereby the families of the absent men at this work have been able to obtain temporary assistance and rations, until money is sent to them, have been a boon to hundreds who otherwise were in a most distressed condition; but arrangements have now been made which, instead, enable these families to draw a portion of the men's pay, who sign orders for same to the Forest Inspectors, who forward them on to the Bureau. The railway deviation works caused an expenditure of £35,000. Special provision was made for rations for families in distress, and, as in the case of the forest-thinners, was greatly appreciated. It may here be noted that notwithstanding the liberal provisions made to give employment on railway deviations at day wages of 6s., out of 416 sent no less than 114 left their work—abandoned it—whilst others were dismissed for various reasons. These are the men I referred to as crying for work the loudest, and wanting it the least. The work is provided for them, and they refuse to keep at it, preferring rations to work.

These items make up the total named of £201,591 4s. 1d.

The numerous letters and personal expressions of grateful thanks from families who have benefited, at a critical time, are a sad testimony, showing that what must have proved a terrible and calamitous time has been safely tided over by a well-timed expenditure, and which, though large, may be claimed as a judicious one under existing circumstances, combining, as it did, works of a useful and necessary character with others from which a return may be anticipated eventually, and together resulting in relief afforded and pauperism avoided.

### General.

The number of unemployed registered at the Bureau was 14,062 (or 487 more than the previous year), of which 5,450 were married men, with 11,755 children depending on them. Single men registered amounted to 8,612. The total number assisted and sent to work for the year amounted to 20,576, or 4,196 more than the preceding year, and 6,514 more than the number registered during the period. This is mainly owing to the large number of passes issued to country places to applicants who have not been registered in addition to those who have been registered during previous years. There is a decrease of 3,625 in the number of fossickers sent out, owing no doubt to the drought, the effects of which have already been mentioned, the total number for the year being 7,093, as against 10,718 for that of the previous.

The number of arrivals from the other Colonies, &c. (996), show a decrease of 105 to those of the previous year, when 1,101 were recorded. By applicants supplying incorrect information (in the fear that the truth would disentitle them to the privileges extended to those of longer residence), I have no doubt a much larger number than that quoted passed through. The number of those registered at the Bureau who were arrested for drunkenness and other offences (whose tickets were taken from them and forwarded to me by the police) is 321, or more than double that of the preceding year, when 153 were reported.

It seems strange, but is nevertheless true, that there are some unfortunates in the community who, however poor and destitute, as soon as they earn any money get drunk, and find their way to the lock-up.

The average daily attendance of unemployed at the Bureau during the greater portion of the year has been very large. Many months it averaged daily from 1,500 to 2,500, but it has fallen off considerably during the last few weeks, only from 300 to 500 attending.

The conduct of the men, particularly the single men, while engaged on the relief works at the park was, I regret to state, very rowdy indeed at times. They gave, as already mentioned, a great deal of trouble to myself and staff, and a firm hand had to be exercised in dealing with them, and drilling them into discipline and order. Many have thought my measures for dealing with them too harsh, but it should not be forgotten that many of these characters were bad and dangerous, and in their own interests, as well as ours, definite and strict measures were absolutely necessary.

JOSEPH CREER,  
Superintendent.

CLASSIFICATION of Trades and Occupations registered during the year ending 17th February, 1896, and a comparison of same with previous years.

Trades, &c.	1893-94.	1894-95.	1895-96.	Trades, &c.	1893-94.	1894-95.	1895-96.
Actors.....		1		Foundry hands.....		1	33
Artesian-well borers.....		2	2	Farriers.....	11	5	20
Architects.....	1	4	5	French polishers.....	14	15	11
Artists.....	4	2	1	Farm hands.....	473	407	222
Artists' models.....		2		Fellmongers.....	3	67	69
Assayers.....		5	2	Fishermen.....		4	15
Asphalters.....	7	5	9	Fitters.....	19	29	42
Axle-turners.....				Furriers.....			3
Auctioneers.....	3	3	1	Florists.....		1	3
Art decorators.....			1	Frame-makers (picture).....			2
Acrobats.....			1	Furnaceman.....		1	
Bakers.....	147	100	129	Gardeners.....	155	152	137
Basket-makers.....	7	2	7	Generally usefals.....	762	396	345
Brushmakers.....	1	4	1	Grocers.....	86	72	73
Barmen and "boots".....	30	21	21	Grooms.....	338	323	272
Billiard-markers.....	1		2	Gunsmiths.....		3	3
Blacksmiths and strikers.....	201	174	156	Glaziers.....			3
Boiler-makers.....	74	33	26	Galvanizers.....			1
Bootmakers.....	89	77	201	Goldsmiths.....		1	
Bookbinders.....	4	6	7	Glass-stainers.....		4	
Brass-finishers.....		3	10	Glass-makers.....	1		
Brass-moulders.....	5	4	2	Hairdressers.....	33	21	24
Bricklayers.....	206	123	110	Hydropathists.....			1
Brickmakers.....	81	86	78	Hatters.....	4		3
Bushmen.....		190	188	Horse-collar-makers.....			2
Butchers.....	199	196	212	Horse-trainers.....		4	
Bacon-curers.....		1	1	Iron-turners.....		31	9
Bellows-makers.....		1		Iron-workers.....	23	16	25
Brewers and hands.....	5	6	3	Iron-moulders.....	63	22	39
Bridge hands, &c.....	16	9	19	Ironmongers.....	13	12	20
Boat-builders.....	4	2	2	Ivory-turners.....			
Bottlers.....	3	6	8	Iron-dressers.....			1
Butlers.....			1	Ink-makers.....		1	
Boot-finishers.....		2	8	Jockeys.....			2
Brass-workers.....			1	Jewellers.....	5	4	5
Boatmen.....			1	Journalists.....	12	11	8
Barbers.....	2	2	1	Jammakers.....			5
Bone-carvers.....			1	Japanners.....	1	1	
Builders.....	5			Locksmiths.....	2	7	3
Canvassers.....	19	26	44	Labourers.....	3,285	4,548	6,152
Caretakers.....	15	16	14	Laundry hands.....	1	2	1
Carpenters.....	576	537	339	Lithographers.....		1	8
Carters.....	348	321	472	Leather-dressers.....	1	1	1
Casemakers.....		6	5	Law clerks.....		1	6
Charcoal-burners.....			1	Lead-workers.....		1	
Clerks, accountants, &c.....	264	263	264	Lumpers.....	2		
Coach-painters.....	5	11	13	Marble masons.....			10
Coach-body makers.....	41	12	8	Millers.....	8	8	13
Coachsmiths.....		15	9	Millwrights.....	5	4	1
Compositors.....		61	92	Machinists.....	26	13	2
Cooks.....	314	262	275	Marble-polishers.....	11	4	3
Coopers.....	8	13	18	Married couples.....	42	39	17
Coppersmiths.....	5	4		Masons (stone).....	134	133	110
Cordial-makers.....	9	10	8	Miners.....	1,200	2,116	1,200
Condiment-makers.....		1		Musicians.....	6	5	7
Curriers.....	8	4	8	Mining engineers.....		3	5
Chemists.....		12	17	Metal-polishers.....			1
Coachmen.....	6	17	10	Medical doctors.....			1
Commercial travellers.....	15	20	13	Master mariners.....	3	1	8
Confectioners.....	8	14	6	Matmakers.....			1
Cabinet-makers.....		5	11	Messengers.....		1	
Cellarmen.....	5	3	1	Merchants.....		1	
Civil engineers.....		4	5	Marine engineers.....		2	
Circus hands.....		2		Mining surveyors.....		1	
Chainmen.....	23	19	20	Naturalists.....		1	
Cloth-weavers.....		2	1	Overseers.....	8		1
Chimney-sweeps.....		1	4	Orchard hands.....	14	25	24
Cigarette-makers.....			1	Oilmakers.....			1
Cabmen.....			2	Opticians.....	1	2	1
Carpet-layers.....		1		Ovenmakers.....			4
Clay-modellers.....	1	1		Photographers.....	1	12	10
Chairmakers.....		1		Potters.....	6	5	5
Dairy hands.....	66	43	41	Portmanteau-makers.....	1	1	1
Drapers.....	44	57	30	Painters and paperhangers.....	245	196	185
Dentists.....	1	2	1	Pattern-makers.....	5	2	2
Draftsmen.....		8	6	Pipelayers.....		1	2
Dyers.....	3	1	3	Plasterers.....	117	81	96
Dealers, hawkers, &c.....		21	94	Plumbers.....	112	86	70
Drainers.....	3	4	9	Porters.....	6	11	5
Drovers.....		3		Printers.....	87	59	52
Divers.....		4		Packers.....	13	8	13
Engineers.....	158	138	100	Pastrycooks.....		8	9
Engravers.....		1	6	Paper-rulers.....			3
Engine-drivers.....	112	103	80	Piano-tuners.....			2
Electricians.....	4	9	7	Plate-layers.....	2	1	
Electroplaters.....			1	Paper-makers.....	1		
Fencers.....	3	3		Piledrivers.....	1		
Finemen.....	99	68	69	Quarrymen.....	56	110	112

Trades, &c.	1893-94.	1894-95.	1895-96.	Trades, &c.	1893-94.	1894-95.	1895-96.
Rope-makers .....		2	3	Tanners .....	8	14	15
Riveters .....			3	Tent-makers .....	9	4	11
Rubble masons .....	1		1	Tutors .....	22	14	19
Saddle and harness makers .....	54	43	40	Tailor's pressers .....	1	4	2
Sawyers .....	38	32	39	Tea merchants .....			1
Seamen .....	20	135	139	Tile hands .....	2		2
Shearers .....	29	158	165	Telegraph operators .....	1	4	3
Shipwrights .....	26	27	30	Tobacco hands .....	3		8
Stenographers .....		2	3	Tallow-makers .....	1	1	5
Signwriters .....	6	3	3	Typefounders .....			1
Smelters .....		6	5	Ticket-writers .....		1	
Slaters .....	3	7	7	Teamsters .....		1	
Soapmakers .....		3	1	Upholsterers .....	11	19	13
Stewards .....	26	31	16	Undertakers .....			2
Storekeepers .....	96	35	24	Umbrella-makers .....	1	1	
Station hands .....	763	299	253	Venetian-blind makers .....	2	3	3
Sugar-mill hands .....			1	Vocalists .....	1		1
Surveyors .....	2	10	7	Vignerons .....	2	1	
Storemen .....		55	60	Veterinary surgeons .....		1	
Salesmen .....	21	40	27	Vegetable-gardeners .....		1	
Stereotypers .....		1	2	Watchmakers .....	5	10	6
Stationers .....	3	2	3	Waiters .....	31	38	37
Stone-cutters .....			2	Wheelwrights .....	27	22	26
Ship's plumbers .....			2	Wireworkers .....	6	4	7
Saw-sharpeners .....			1	Woolclassers .....			12
Showmen .....			1	Woodpressers .....	52	22	14
Surgeons .....			1	Wardsmen .....	11	2	3
Solicitors .....			1	Wood-turners .....	5	5	10
Scenic artists .....	1			Wire-mattress makers .....		3	2
Ship's caulkers .....	1			Warehousemen .....	3	23	9
Shearing machinists .....	1			Whip-makers .....		2	3
Stone-polishers (litho.) .....	1			Wood-carvers .....	1	2	
Saw-makers .....	1			Whitesmiths .....		1	
Slaughtermen .....	3			Zinc-workers .....			3
Tailors .....	59	71	47	Callings not classified .....	76	53	3
Tinsmiths .....	41	31	31				
Timber yardmen .....		3	3	Totals .....	12,145	13,575	14,062

#### Detail Summary of Registrations for year ending 17th February, 1896.

Total registrations	...	...	...	...	...	...	14,062
Arrivals	...	From Colonies		...	996	...	3,037
		North.	South.	West.			
		642	891	503	...	2,041	
Local registrations	...	...	...	...	...	...	11,025
Registrations since inauguration	...	...	...	...	...	...	58,392
Married men	...	...	...	...	...	...	5,450
Single men	...	...	...	...	...	...	8,612
Children represented	...	...	...	...	...	...	15,237
Children self-supporting	...	...	...	...	...	...	3,482
Children dependent	...	...	...	...	...	...	11,755

REPORT showing the number of arrivals from the other Colonies, the United Kingdom, and Foreign parts, and residents here, all within six months during the year ending 17th February, 1896; and a comparison of same with previous years:—

From.	1892-1893.	1893-1894.	1894-1895.	1895-1896.
Queensland .....	332	188	170	204
Victoria .....	598	413	200	177
South Australia .....	67	34	37	42
Western Australia .....	20	21	130	66
Tasmania .....	110	60	51	40
New Zealand .....	196	104	289	306
United Kingdom .....	301	142	114	94
Foreign parts .....	147	95	110	67
Totals .....	1,771	1,057	1,101	996

RETURN of Police Reports for the year ending 17th February, 1896, and a comparison of same with previous years :—

Offences.	1st year.	2nd year.	3rd year.	4th year.
Drunkenness .....	290	118	114	228
Theft .....	34	25	9	27
Riotous and assault .....	21	22	8	20
Indecency .....	8	2	.....	5
Begging and vagrancy .....	11	9	5	4
Language .....	11	11	11	16
Breaking, &c. (suspected) .....	6	4	1	3
False pretences .....	6	2	4	1
Artillery desertion .....	.....	1	.....	.....
Gambling .....	6	1	.....	.....
Embezzlement .....	2	.....	.....	.....
Wife desertion .....	4	.....	.....	2
Lunacy .....	.....	.....	1	1
Totals .....	399	195	153	321

ANNUAL RESULT STATEMENT.

GOVERNMENT LABOUR BUREAU.

Results for the four years ending 17th February, 1896.

A COMPARATIVE Table showing number registered for each of the years ending 17th February, 1893, 1894, 1895, and 1896; number assisted and sent to work for the same periods; amounts refunded for passes in each year; number of fossickers sent out from Sydney, Newcastle, Goulburn, Bathurst, and other places; together with increase or decrease under each head.

Year ending 17th February.	Number registered.	Increase or decrease	Number assisted and sent to work.	Increase or decrease.	Refunds for passes.	Increase or decrease.	Number of fossickers.	Increase or decrease.	Remarks.
1893	18,600	.....	8,154	.....	£ s. d. 1,135 16 1	£ s. d. .....	.....*	.....	
1894	12,145	D. 6,455	10,349	I. 2,195	2,676 10 0	1,540 13 11	4,516	.....	* Fossickers were not sent out during the first year. Last year's decrease in the fossickers was caused mainly through the dry season.
1895	13,575	I. 1,430	16,380	I. 6,031	2,477 15 8	198 14 4	10,718	6,202	
1896	14,062	I. 487	20,576	I. 4,196	4,235 19 6	1,758 3 10	7,093	3,625	
Total...	58,382	.....	55,459	.....	10,526 1 3	.....	22,327	.....	

GOVERNMENT LABOUR BUREAU.

TABLE showing various trades and callings to which persons have been sent in town and country; summary of wages recorded; total refunds for passes for year ending 17th February, 1896; together with comparative figures for the previous twelve months, and remarks thereon.

Trades and Callings.	Year ending 17th Feb., 1895.			Year ending 17th Feb., 1896.			Increase.		Decrease.		Wages recorded.	
	Town.	Country	Total	Town.	Country	Total	Town.	Country	Town.	Country	1895.	1896.*
Accountants .....	...	...	...	1	3	4	1	3	...	...	.....	.....
Actors .....	...	1	1	...	...	...	...	...	...	1	.....	.....
Artists' models .....	3	...	3	2	...	2	...	...	1	...	1s. to 2s. 6d.....	.....
Asphalters .....	1	...	1	7	...	7	6	...	...	...	Contract .....	.....
Bakers .....	7	35	42	2	54	56	...	17	5	...	25s. to 50s. per week	.....
Barmen .....	...	...	...	1	1	2	1	1	...	...	.....	.....
Barbers .....	2	5	7	...	8	8	...	3	2	...	15s. to 30s. ....	.....
Basket-makers .....	2	...	2	...	...	...	...	...	2	...	Piece .....	.....
Batmakers .....	...	1	1	...	...	...	...	...	...	1	" .....	.....
Bellman .....	1	...	1	...	...	...	...	...	1	...	.....	.....
Bellows-makers .....	2	...	2	...	...	...	...	...	2	...	.....	.....
Billiard-makers .....	2	...	2	...	...	...	...	2	...	...	.....	.....
Blacksmiths .....	14	28	42	33	25	58	28	6	...	...	15s. to 20s.....	.....
Bootmakers .....	5	12	17	2	22	24	...	10	3	...	25s. to 50s. per week	.....
Boatbuilders .....	...	...	...	...	...	...	...	...	...	...	Piece .....	.....
Bookbinders .....	1	...	7	...	...	...	...	...	1	...	.....	.....

\* Wages.—Except where otherwise shown, wages have remained about the same so far as has been recorded. In the cases referred to there has been a decrease, though not to any marked extent.

Trades and Callings.	Year ending 17th Feb., 1895.			Year ending 17th Feb., 1896.			Increase.		Decrease.		Wages Recorded.	
	Town.	Country.	Total.	Town.	Country.	Total.	Town.	Country.	Town.	Country.	1895.	1896.*
Boiler-makers, &c.	3	12	15	10	4	14	7	...	...	8	1s. per hour	.....
Bandmaster	...	1	1	...	...	...	...	...	...	1	.....	.....
Brass-finishers	1	...	1	2	...	2	1	...	...	...	1s. per hour	.....
Brass-moulder	...	...	...	1	...	1	1	...	...	...	.....	.....
Bricklayers	28	28	56	77	45	122	49	17	...	...	7s. to 10s.	7s. to 9s.
Brickmakers	2	21	23	...	14	14	...	...	2	7	Contract	.....
Brewer's hands	...	1	1	...	...	...	...	...	...	1	.....	.....
Bridge hands	...	9	9	2	11	13	2	2	...	...	1s. per hour	6s. to 8s.
Brushwood-turner	...	1	1	...	...	...	...	...	...	1	.....	.....
Brushmaker	...	...	...	1	...	1	1	...	...	...	.....	.....
Bushmen	17	130	147	29	55	84	12	...	...	75	10s. to 20s.	10s. to 17s. 6d.
Butchers	5	67	72	14	89	103	9	22	...	...	20s. to 45s.	15s. to 40s.
Broom-makers	1	2	3	...	...	...	...	...	...	1	Piece	.....
Canvassers	37	5	42	58	9	67	21	4	...	...	Salary & commission	.....
Carpenters and joiners.	286	50	336	194	84	278	...	34	92	...	6s. to 10s. per day.	6s. to 8s. and lathe found.
Carpenters (bridge)	...	10	10	6	24	30	6	14	...	...	1s. per hour	.....
Carpenters (ship)	...	...	...	...	5	5	...	5	...	...	.....	.....
Carotakers	4	1	5	2	5	7	...	4	2	...	8s. to 15s.	5s. to 15s.
Casemakers	1	...	1	...	2	2	...	2	1	...	7s. per day	.....
Cabinet-makers	4	4	8	7	...	7	3	...	...	4	1s. per hour	.....
Chaff-cutters	1	2	3	...	...	...	...	...	1	2	.....	.....
Clerks, &c.	1	6	7	3	16	19	2	10	...	...	10s. to 40s.	.....
Chemists	...	1	1	...	1	1	...	...	...	...	.....	.....
Cooks	39	63	102	30	122	152	...	59	9	...	15s. to 50s.	10s. to 40s.
Coppersmiths	3	...	3	...	1	1	...	1	3	...	1s. per hour	.....
Confectioner	...	...	...	1	...	1	1	...	...	...	.....	.....
Coach trades	8	6	14	11	2	13	3	4	...	...	1s. to 1s. 2d. p. hour	7s. to 9s.
Cordial-makers	...	1	1	...	...	...	...	...	1	...	25s. per week	.....
Coopers	10	1	11	4	4	8	...	3	6	...	1s. per hour	And piecework.
Curriers and tanners	...	...	...	...	2	2	...	2	...	...	.....	.....
Divers	8	...	3	...	...	...	...	...	3	...	2s. 6d. to 3s. p. hour	.....
Doctor	...	...	...	...	1	1	...	1	...	...	.....	.....
Drapers	...	9	9	2	6	8	2	...	...	3	30s. to 40s.	15s. & found to 40s.
Drainers	2	...	2	...	...	...	...	...	2	...	.....	.....
Drivers	19	22	41	92	10	102	73	...	...	12	10s. to 25s.	10s. to 20s.
Drover	...	...	...	...	1	1	...	1	...	...	.....	.....
Dyers	...	1	1	3	...	3	2	...	...	...	.....	.....
Engine-drivers	2	10	12	7	30	37	5	20	...	...	30s. to 45s.	.....
Engineers	9	10	19	6	8	14	...	...	3	2	25s. to 40s.	.....
" electric	...	...	...	...	8	8	...	8	...	...	.....	.....
" refrigerating	...	...	...	...	1	1	...	1	...	...	.....	.....
" mining	...	...	...	...	3	3	...	3	...	...	.....	.....
Farm and orchard	47	164	211	37	149	186	...	...	10	15	10s. to 20s.	8s. to 20s.
Factory hands	...	...	...	1	...	1	1	...	...	...	.....	.....
Fencers	...	...	...	4	3	7	4	3	...	...	.....	Contract.
Fellmongers	8	5	13	2	63	65	...	58	6	...	.....	.....
Fishermen	18	2	20	...	1	1	...	...	18	1	.....	.....
Firemen	5	1	6	5	3	8	...	2	...	...	7s. to 9s.	.....
Fitters	...	1	1	...	...	...	...	...	...	1	1s. per hour	.....
Flour-mill hands	1	...	1	...	...	...	...	...	1	...	20s. and found	.....
French-polishers	7	...	7	2	1	3	...	1	5	...	1s. per hour	.....
Furnacemen	2	1	3	...	...	...	...	...	2	1	.....	.....
Gardeners	61	38	99	50	38	88	...	...	11	...	10s. to 20s.	8s. to 20s.
Galvanised-iron workers	...	...	...	5	2	7	5	2	...	...	.....	.....
General usefuls	259	377	636	228	233	461	...	...	31	144	5s. to 20s.	.....
Glazier	1	...	1	...	...	...	...	...	1	...	.....	.....
†Governesses, servants, &c.	10	275	285	10	227	237	...	...	...	48	.....	.....
Grocers	5	3	8	1	5	6	...	2	4	...	15s. to 40s.	.....
Grooms	19	5	24	26	23	49	7	18	...	...	10s. to 20s.	.....
Hawkers	...	...	...	2	1	3	2	1	...	...	.....	.....
Hospital attendants	3	1	4	5	2	7	2	1	...	...	.....	.....
Horse-breakers	...	2	2	...	...	...	...	...	...	2	.....	.....
Horse-clippers	15	...	15	8	...	8	...	...	7	...	.....	.....
Iron-moulders	...	...	...	1	4	5	1	4	...	...	.....	.....
Iron-fitters	...	...	...	6	3	9	6	3	...	...	.....	.....
Iron-workers	13	2	15	2	1	3	...	...	11	1	7s. to 8s.	.....
Iron-turners	1	...	1	10	6	16	9	6	...	...	1s. per hour	.....
Jam-makers	...	...	...	4	...	4	4	...	...	...	.....	.....
Jewellers	...	2	2	...	3	3	...	...	...	2	.....	.....
Kitchenmen	23	1	24	25	...	25	2	...	...	1	8s. to 20s.	8s. to 15s.
Labourers, Forest Dept.	...	...	...	1,367	1,367	...	1,367	...	...	...	.....	6s. a day, & pr. acr.
" Randwick	...	...	...	1,282	1,282	...	1,282	...	...	...	.....	.....
" Shea's Ck.	...	...	...	2,415	2,415	...	2,415	...	...	...	.....	.....
" general	1,274	196	1,470	731	699	1,430	...	603	543	...	5s. to 7s.	10s. a week, 4s. a day, to 1s. pr. hr.
Locksmiths	...	...	...	2	...	2	2	...	...	...	.....	.....
Masons, stone	...	...	...	16	19	35	16	19	...	...	.....	7s. to 9s.
" rubble	...	1	1	...	...	...	...	...	...	1	.....	.....
" marble	...	...	...	3	5	8	3	5	...	...	.....	1s. per hour.

\* Wages.—Except where otherwise shown, wages have remained about the same so far as has been recorded. In the cases referred to the e has been a decrease, though not to any marked extent.

† Females.—The majority of these, as hitherto, are women with their families sent out to join the head of the family, who had previously been assisted to work in the country, and who had sent for his family to join him.

‡ Labourers.—Average rate recorded slightly lower

Trades and Callings.	Year ending 17th Feb., 1895.			Year ending 17th Feb., 1896.			Increase.		Decrease.		Wages Recorded.	
	Town.	Country	Total.	Town.	Country	Total.	Town.	Country	Town.	Country	1895.	1896.*
Marble hands .....	2	1	3	...	...	...	...	...	2	1	1s. per hour ...	...
Married couples.....	9-18	106-212	230	6-12	90-180	192	...	...	3-6	16-32	£45 to £75 pr. ann.	£40 to £75 pr. ann.
Millwrights .....	1	3	4	...	...	...	...	...	1	3	...	...
Miners .....	5	211	216	...	184	184	...	...	5	27	...	...
†Miners(fossickersfrom Sydney).	...	7,573	7,573	...	3,917	3,917	...	...	...	3,656	...	...
„ (fossickersfrom other places).	...	2,561	2,561	...	2,749	2,749	...	188	...	...	...	...
„ (rights only)...	...	584	584	...	427	427	...	...	...	157	...	...
Moulders .....	...	...	...	...	...	...	...	...	...	...	...	...
Netmakers .....	...	...	...	...	...	...	...	...	...	...	...	...
Painters and paper-hangers.	43	17	60	109	29	138	66	12	...	...	6s. to 8s.	...
Pattern-makers .....	3	1	4	8	3	11	5	2	...	...	1s. per hour	...
Packers .....	7	...	7	...	...	...	...	...	7	...	...	...
Pipe-layers .....	...	27	27	5	3	8	5	...	...	24	5s. to 8s.	...
Pisé-builders .....	...	...	...	...	2	2	...	2	...	...	...	...
Plasterers .....	14	...	14	10	5	15	...	5	4	...	...	...
Plate-layers .....	...	...	...	...	15	15	...	15	...	...	...	...
Photographers .....	...	4	4	...	1	1	...	...	...	3	...	...
Plumbers .....	20	7	27	12	6	18	...	...	8	1	7s. to 8s.	...
Printers & compositors	28	14	42	2	7	9	...	...	26	7	...	...
Quarrymen .....	5	7	12	50	6	66	45	...	...	1	6s. 6d. to 8s. 6d.	6s. to 8s.
Reporter .....	...	1	1	...	...	...	...	...	...	1	...	...
Riveters .....	...	...	...	...	16	16	...	16	...	...	...	...
Saddle and harness makers.	4	11	15	1	6	7	...	...	3	5	25s. to 50s.	...
Sawyers .....	9	6	15	3	17	20	...	11	6	...	10s. to 12s. per 100	...
Sandwich-men .....	...	...	...	22	...	22	22	...	...	...	...	...
Shearers .....	...	134	134	...	310	310	...	176	...	...	20s. per 100	...
Shipwrights .....	3	3	6	...	6	6	...	3	3	...	1s. per hour	...
Signwriters .....	2	...	2	...	2	2	...	2	2	...	...	...
Slaters .....	3	...	3	4	...	4	1	...	...	...	7s. to 8s.	...
Smelters .....	4	3	7	...	3	3	...	...	4	...	...	...
Soapmakers.....	...	...	...	...	...	...	...	...	...	...	...	...
Store hands .....	3	10	13	...	6	6	3	...	...	4	20s. to 40s.	...
Station hands .....	1	631	632	...	385	385	...	...	1	246	10s. to 25s.	10s. to 20s.
Sugar-cane hands .....	...	14	14	...	2	2	...	...	...	12	...	...
Sailor-men .....	9	...	9	...	...	...	...	...	9	...	...	...
Surveyors' hands .....	5	13	18	...	15	15	...	2	5	...	12s. 6d. to 25s.	...
Sleeper-squarers.....	...	4	4	...	34	34	...	30	...	...	...	...
Slaughtermen .....	1	...	1	...	3	3	...	3	1	...	...	...
Stonebreakers .....	7	18	25	40	34	74	33	16	...	...	2s. to 3s. per load...	...
Special work .....	...	...	...	2,662	2,662	2,662	2,662	...	...	...	...	...
Tailors.....	3	24	27	2	25	27	...	1	1	...	By the piece	...
Tanners .....	...	1	1	5	4	9	5	3	...	...	...	...
Tank-sinkers .....	...	...	...	...	3	3	...	3	...	...	...	...
Tinsmiths .....	2	1	3	13	7	20	11	6	...	...	25s. to 40s.	...
Tutors.....	3	7	10	1	9	10	...	2	2	...	15s. to 20s.	...
Traveller.....	1	...	1	...	...	...	...	...	1	...	...	...
Tile-layer .....	1	...	1	...	...	...	...	...	1	...	...	...
Tip-cart drivers .....	...	...	...	42	...	42	42	...	...	...	...	...
Upholsterers .....	6	...	6	2	...	2	...	...	4	...	...	...
Village settlers .....	...	31	31	...	1	1	...	...	...	30	...	...
Waiters, stewards, &c.	4	1	5	5	3	8	1	2	...	...	10s. to 20s.	...
Weavers.....	...	...	...	...	5	5	...	5	...	...	...	...
Well-borers.....	...	6	6	...	2	2	...	4	...	...	15s. to 30s.	...
Wheelwrights .....	6	2	8	22	11	33	16	9	...	...	30s. to 45s.	...
Wool hands .....	...	71	71	...	...	...	...	...	71	...	...	...
Wool-classers .....	...	9	9	...	17	17	...	8	...	...	...	...
Wool hands (store) ...	...	...	...	32	...	32	32	...	...	...	...	...
Wool-pressers.....	...	...	...	15	15	15	...	15	...	...	...	...
Wool-sorters .....	...	...	...	9	9	9	...	9	...	...	...	...
Warders .....	...	2	2	...	...	...	...	...	2	...	...	...
Watchmen .....	1	...	1	1	...	1	...	...	...	...	...	...
<b>Total .....</b>	<b>2,522</b>	<b>13,858</b>	<b>16,380</b>	<b>2,190</b>	<b>18,377</b>	<b>20,576</b>	...	...	...	...	...	...

\* Wages.—Except where otherwise shown, wages have remained about the same so far as has been recorded. In the cases referred to there has been a decrease, though not to any marked extent.

† Fossickers.—The year of drought has been the primary cause of the falling off in numbers going out fossicking. Forest-thinning, railway, and other Government works have also helped to keep the number under this head lower than it would otherwise have been. Many who have earned money on these works have gone out fossicking on their own account, while others have seized the opportunity of going to the West Australian fields.

Refunds.—The total amounts refunded for passes are—1893, £1,135 16s. 1d.; 1894, £2,076 10s.; 1895, £2,477 15s. 8d.; 1896, £4,235 19s. 6d.; total, £10,528 1s. 8d.

RETURN showing the Amount of Money expended by the Government in the interests of the Unemployed from March, 1895, to February, 1896.

CENTENNIAL PARK.—RELIEF WORKS FROM 1ST OF MARCH, 1895, TO FEBRUARY, 1896, INCLUSIVE.

Month.	Total number of men employed.			Average number of men at work weekly (approximate).	Cost of Rations.	Cost of Restaurant Tickets.	Disbursement for Rent.	Total cost of Relief Work.	Number of men on wages, Christmas season.			Amount of wages paid.	Total cost of Relief Work.	Total cost.
	Married.	Single.	Total.						Married.	Single.	Total.			
March	4,302	1,862	6,164	1,541 00	£ s. d. 1,274 8 9	£ s. d. 22 8 9	£ s. d. .....	£ s. d. 1,296 17 6	.....	.....	.....	£ s. d. .....	£ s. d. 1,296 17 6	£ s. d. .....
April	5,175	2,362	7,537	1,884 25	1,591 4 4½	63 18 9	.....	1,655 3 1½	.....	.....	.....	.....	1,655 3 1½	.....
May	5,739	3,037	8,776	2,194 00	1,806 8 10½	97 2 10½	.....	1,903 11 9	.....	.....	.....	.....	1,903 11 9	.....
June	8,500	3,972	12,472	2,494 40	2,653 15 11	124 3 3	.....	2,777 19 2	.....	.....	.....	.....	2,777 19 2	.....
July	7,158	2,860	10,018	2,504 50	2,322 8 11½	84 12 0	.....	2,407 0 11½	.....	.....	.....	.....	2,407 0 11½	.....
August	9,577	3,233	12,810	2,572 00	3,082 19 6½	100 4 0	.....	3,183 3 6½	.....	.....	.....	.....	3,183 3 6½	.....
September	6,631	2,850	9,481	2,370 25	2,175 12 5	81 0 0	.....	2,256 12 5	.....	.....	.....	.....	2,256 12 5	.....
October	6,099	2,942	9,041	2,260 25	1,883 15 5	87 6 0	.....	1,971 1 5	.....	.....	.....	.....	1,971 1 5	.....
November	7,609	3,886	11,494	2,298 80	2,317 13 3½	108 6 0	726 0 0	3,151 19 3½	.....	.....	.....	.....	3,151 19 3½	.....
December	4,317	2,777	7,094	1,773 50	1,329 9 2	85 9 3	1,089 17 6	2,504 15 11	749	198	947	1,238 2 6	3,742 18 5	.....
January	7,930	3,241	10,571	2,114 20	2,242 10 11	99 7 6	1,396 17 6	3,738 15 11	336	253	589	689 15 0	4,428 10 11	.....
February	2,108	519	2,627	656 75	649 14 2	17 1 0	617 5 0	1,284 0 2	50	.....	50	72 2 6	1,356 2 8	.....

Weekly average for year..... 2,079 5 | 23,380 1 9½ | 970 19 4½ | 3,830 0 0 | 28,191 1 2 | 1,135 | 451 | 1,586 | 2,000 0 0 | 30,131 1 2 | 30,131 1 2

Free rations..... £493 15s. 4d. | Night shelter ..... £231 12s. 9d. | Fossilickers' rations ..... £41 18s. | 767 6 1

COST OF SPECIAL CHRISTMAS WORK.  
(Exclusive of £2,000 included in Centennial Park, as above.)

COST OF OTHER SPECIAL WAGES WORK TO UNEMPLOYED.

Art Gallery.	Cockatoo Island.	Shea's Creek.	Bunnerong Road.	Church and School Lands.	Botany Wharf.	Berowra Road.	Total.	Church and School Lands.	Shea's Creek.	Roselle Bay.	Woolloomooloo Bay.	Temora Road.	Muddy Creek.	Cook's River.	Total.
£ 1,637	£ 90	£ 720	£ 72	£ 439	£ 90	£ 1,065	£ 4,113	£ s. d. 10,000 0 0	£ s. d. 38,498 4 5	£ s. d. 1,652 10 3	£ s. d. 2,695 8 4	£ s. d. 415 13 1	£ s. d. 6,846 19 3	£ s. d. 4,790 8 4	£ s. d. 64,899 3 8

SPECIAL GRANTS TO MUNICIPALITIES TO ASSIST DESTITUTE UNEMPLOYED.

Greta.	Waratah.	Plattsburg.	Hamilton.	Adamstown.	Merewether.	Carrington.	Wickham.	Raymond Terrace.	Wallsend and Plattsburg.	New Lambton.
£ s. d. 80 2 0	£ s. d. 75 0 0	£ s. d. 50 0 0	£ s. d. 25 0 0	£ s. d. 100 0 0	£ s. d. 50 0 0	£ s. d. 40 0 0	£ s. d. 15 0 0	£ s. d. 150 0 0	£ s. d. 150 0 0	£ s. d. 50 0 0
Broken Hill.	West Maitland.	East Maitland.	Coulburn.	Stockton.	Singleton.	Liverpool.	Smithfield and Fairfield.	Lithgow.	Queanbeyan.	Bourke.
£ s. d. 250 0 0	£ s. d. 200 0 0	£ s. d. 50 0 0	£ s. d. 100 0 0	£ s. d. 50 0 0	£ s. d. 50 0 0	£ s. d. 50 0 0	£ s. d. 25 0 0	£ s. d. 50 0 0	£ s. d. 50 0 0	£ s. d. 50 0 0

1,710 2 0

COST OF RAILWAY AND STEAMER FARES TO UNEMPLOYED FROM MARCH, 1895, TO FEBRUARY, 1896, INCLUSIVE.

Total cost of railway and steamer fares ...	£19,028 3s. 4d.	Deduct refunds .....	£4,057 12s. 2d.	Unpaid balance .....	£14,970 11s. 2d.	14,970 11 2
Forest-thinning for Unemployed, approximate cost .....					£50,000	
Railway deviation works for Unemployed, approximate cost .....					35,000	85,000 0 0
<b>TOTAL</b> .....						£ 201,591 4 1

This does not include cost of plant or supervision, &c.  
[One Plan.]

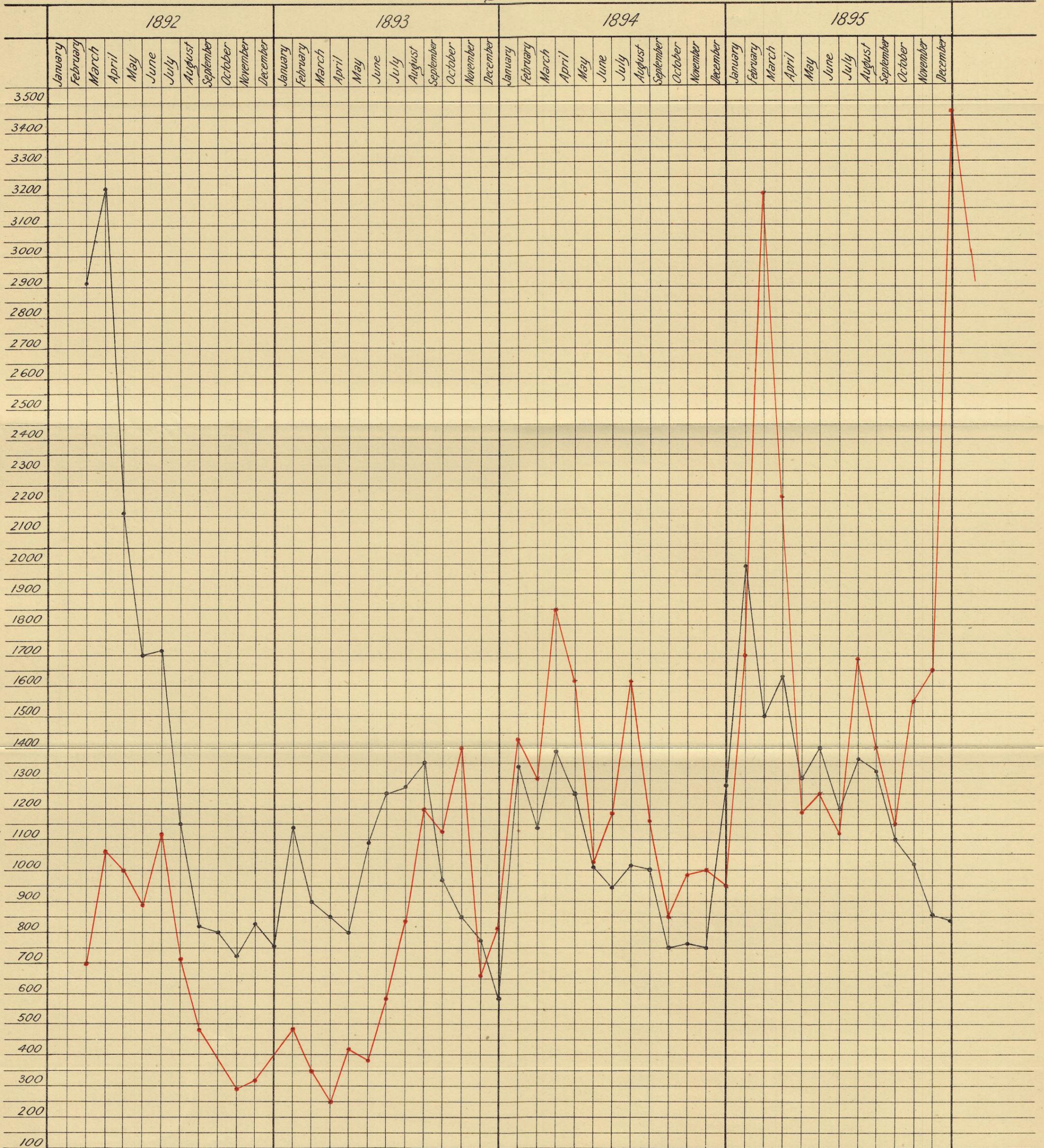
JOSEPH CREER, Superintendent.

Sydney: Charles Potter, Government Printer.—1896.



Diagram showing monthly variations in the numbers of registrations and of persons sent to employment during the years 1892, 1893, 1894 and 1895.

— Men sent to employment.  
 — Men registered.



(Sig. 134.)

1896.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

**THE UNEMPLOYED.**

(RETURN SHOWING COST OF, SINCE 1891.)

*Printed under No. 4 Report from Printing Committee, 11 June, 1896.**[Laid upon the Table in answer to Question No. 17 of 27th May, 1896.]***Question.**

17. THE UNEMPLOYED:—MR. W. H. B. PIDDINGTON *asked* THE MINISTER OF PUBLIC INSTRUCTION,—
- (1.) What is the total sum paid for the relief for the unemployed on—1st, Shea's Creek; 2nd, Centennial Park; 3rd, railway fares; 4th, forest-thinning, from commencement of work to date?
  - (2.) What has been the total cost to the country of the unemployed for the years 1892, 1893, 1894, 1895, 1896 to date?
  - (3.) Since the establishment of the Labour Bureau country agencies, what sum has been expended for the relief of the unemployed in the country districts?

**Answer.**

(1.) Total expenditure on Shea's Creek, Muddy Creek, and Cook's River, to 26th May, 1896, £227,243 (including the cost of resumption, viz., £22,880). It is pointed out by the Works Department that a greater part of the above amount was expended on works that can hardly be termed "relief for the unemployed." Centennial Park to 30th May, 1896, £33,234. Railway fares, £50,759 4s. 1d. Of this amount, £30,000 may be put down to railway tickets granted to fossickers. Forest-thinning, £47,200. The whole of this amount, however, cannot be regarded as expenditure for the relief of the unemployed.

(2.) Total cost of unemployed for the years 1892, 1893, 1894, 1895, 1896 to date:—

	£	s.	d.
1892 .....	2,674	11	6
1893 .....	5,832	1	0
1894 .....	8,037	6	2
1895 .....	3,690	0	2
1896 .....	1,267	10	0 to date.

Total ..... £21,501 8 10

These amounts show the expenditure in city and country for the relief of the unemployed through the Labour Bureau in the years named, but are exclusive of railway fares and the expenditure on the Centennial Park. They include the cost of free rations, rations to fossickers, miners' rights, bed and meal tickets, municipal subsidies, &c.

(3.) Relief for the unemployed in the country districts, £470 15s. 5d. This sum represents money actually paid since March last, but the balances of a number of municipal grants still remain to be expended in the country districts.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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**THE UNEMPLOYED.**

(PETITION FROM CERTAIN UNEMPLOYED OF THE CITY OF SYDNEY AND ITS ENVIRONS, PRAYING FOR WORK AT FAIR AND REASONABLE RATES.)

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*Received by the Legislative Assembly, 5 August, 1896.*

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To the Honorable the Speaker and the Members of the Legislative Assembly of the Colony of New South Wales, in Parliament assembled.

The humble Petition of the Unemployed of the City of Sydney and its environments,—

HUMBLY SHOWETH:—

Your Petitioners are electors of the said Colony, and are in distressed and destitute circumstances owing to their inability to secure employment, thereby preventing them earning sufficient to support themselves and those dependent upon them.

That it is a well-known fact that the prevailing distress is widespread and unequalled in the history of this Colony.

That, in the opinion of your Petitioners, it is a duty incumbent upon the representatives of the people to mitigate the said distress by finding employment on profitable works for those who only ask leave to toil, and to dispense with charitable assistance (however kindly meant) either from the present Government or from any other source or sources whatsoever.

Your Petitioners therefore pray that your Honorable House will, irrespective of party ties and obligations, unite and provide work at fair and reasonable rates for the unemployed of this Colony.

And your Petitioners, as in duty bound, will ever pray.

Signed on behalf of the Unemployed of New South Wales,—

[Here follow 10 signatures.]

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1896.

—  
LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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PROGRESS REPORT FROM THE SELECT COMMITTEE

ON

# PITT TOWN SETTLEMENT;

TOGETHER WITH THE

PROCEEDINGS OF THE COMMITTEE

MINUTES OF EVIDENCE,

AND

APPENDIX.

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*Printed under No. 27 Report from Printing Committee, 13 November, 1896, A.M.*

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SYDNEY: WILLIAM APPELGATE GULLICK, GOVERNMENT PRINTER.

1896.

1896.

EXTRACTS FROM THE VOTES AND PROCEEDINGS OF THE  
LEGISLATIVE ASSEMBLY.

VOTES No. 64. TUESDAY, 6 OCTOBER, 1896.

9. PITT TOWN SETTLEMENT :—Mr. Hughes moved, pursuant to Notice,—
- (1.) That a Select Committee be appointed to inquire into and report upon the abandonment of the Pitt Town Settlement scheme.
- (2.) That such Committee consist of Mr. Carruthers, Mr. O'Reilly, Mr. Dick, Mr. O'Sullivan, Mr. Watson, Mr. Rose, Mr. Price, Mr. Ashton, Mr. Kelly, and the Mover.
- Debate ensued.  
Question put and passed.

VOTES No. 73. TUESDAY, 27 OCTOBER, 1896.

7. PITT TOWN SETTLEMENT :—Ordered, on motion of Mr. Hughes, that the following Message be carried to the Legislative Council :—

MR. PRESIDENT,—

The Legislative Assembly having appointed a Select Committee on "Pitt Town Settlement," and the Committee being desirous to examine the Honorable Benjamin Backhouse, a Member of the Legislative Council, in reference thereto, request that the Legislative Council will give leave to its said Member to attend and be examined by the said Committee on such day and days as shall be arranged between him and the said Committee.

*Legislative Assembly Chamber,  
Sydney, 27th October, 1896.*

17. PITT TOWN SETTLEMENT :—Mr. Speaker reported the following Message from the Legislative Council :—

MR. SPEAKER,—

In answer to the Message from the Legislative Assembly, dated 27th October, 1896, requesting leave for the Honorable Benjamin Backhouse, a Member of the Legislative Council, to attend and be examined before a Select Committee of the Legislative Assembly on "Pitt Town Settlement," the Council acquaints the Assembly that leave has been granted to its said Member to attend and be examined by the said Committee if he think fit.

*Legislative Council Chamber,  
Sydney, 27th October, 1896.*

JOHN LACKEY,  
President.

VOTES No. 81. THURSDAY, 12 NOVEMBER, 1896.

8. PITT TOWN SETTLEMENT :—Mr. Watson, for the Chairman, Mr. Hughes, brought up the Progress Report from, and laid upon the Table the Minutes of Proceedings of, and Evidence taken before, the Select Committee for whose consideration and report this subject was referred on 6th October, 1896; together with Appendix.  
Referred by Sessional Order to the Printing Committee.

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1896.  

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PITT TOWN SETTLEMENT.  

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PROGRESS REPORT.  

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THE Select Committee of the Legislative Assembly, appointed on 6th October, 1896,—“to inquire into and report upon the abandonment of the Pitt Town Settlement Scheme,”—have agreed to the following Progress Report:—

Your Committee, having examined the witnesses named in the List\* \*Sec List, page 5. (whose evidence will be found appended hereto), have resolved, owing to the advanced period of the Session, to report the evidence to your Honorable House, and to recommend that the inquiry be resumed early next Session.

W. M. HUGHES,  
Chairman.

No. 3 Committee Room,  
Legislative Assembly,  
12th November, 1896.

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PROCEEDINGS OF THE COMMITTEE.

TUESDAY, 20 OCTOBER, 1896.

MEMBERS PRESENT:—  
Mr. Dick, | Mr. Hughes,  
Mr. O'Reilly.

Mr. Hughes called to the Chair.  
Entry from Votes and Proceedings, appointing the Committee, *read* by the Clerk.  
Committee deliberated.

[Adjourned till To-morrow, at *Two* o'clock.]

WEDNESDAY, 21 OCTOBER, 1896.

MEMBERS PRESENT:—  
Mr. Hughes, | Mr. Watson.

In the absence of a quorum, the meeting called for this day lapsed.

THURSDAY, 22 OCTOBER, 1896.

MEMBERS PRESENT:—  
Mr. Dick, | Mr. Kelly,  
Mr. Hughes in the Chair. |  
Mr. Watson.

James Watson called in, sworn, and examined.  
Witness withdrew.  
William Musto called in, sworn, and examined.  
Witness withdrew.

[Adjourned till Tuesday next, at a *quarter to Three* o'clock.]

TUESDAY, 27 OCTOBER, 1896.

MEMBERS PRESENT:—  
Mr. Dick, | Mr. Kelly,  
Mr. O'Reilly, | Mr. O'Sullivan,  
Mr. Hughes in the Chair. |  
Mr. Watson.

Harry Packwood called in, sworn, and examined.  
Witness withdrew.  
William Reginald Stanley (*Clerk in charge of the Rabbit and Labour Settlement Lease Branch, Lands Department*) called in, sworn, and examined.  
Witness withdrew.

[Adjourned till To-morrow, at *Three* o'clock.]

WEDNESDAY, 28 OCTOBER, 1896.

MEMBERS PRESENT:—  
Mr. Kelly, | Mr. O'Sullivan,  
Mr. Hughes in the Chair. |

Entries from Votes and Proceedings, containing Message to Council requesting leave for the Honorable Benjamin Backhouse to attend and be examined before the Committee, and Message from Council granting leave to its said Member to attend and be examined if he think fit,—*read* by the Clerk.

William McGuire called in, sworn, and examined.  
Witness withdrew.  
Thomas Thornton called in, sworn, and examined.  
Witness withdrew.  
William Musto recalled and further examined.  
Witness withdrew.

[Adjourned till To-morrow, at a *quarter to Three* o'clock.]

THURSDAY, 29 OCTOBER, 1896.

MEMBERS PRESENT:—  
Mr. O'Sullivan, | Mr. Watson,  
Mr. Hughes in the Chair. |

William Reginald Stanley recalled and further examined.  
Witness withdrew.

[Adjourned till Tuesday next, at a *quarter to Three* o'clock.]

TUESDAY,





1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

MINUTES OF EVIDENCE

TAKEN BEFORE

THE SELECT COMMITTEE

ON THE

PITT TOWN SETTLEMENT.

THURSDAY, 22 OCTOBER, 1896.

Present:—

MR. KELLY, | MR. WATSON,  
Mr. DICK.

W. M. HUGHES, ESQ., IN THE CHAIR.

James Watson called in, sworn, and examined:—

1. *Chairman.*] Were you on the Board of Control of the Pitt Town Settlement from its inception? No. J. Watson.
2. How long after the inception of the Board were you placed on it? About eighteen months after it was formed. 22 Oct., 1896
3. Had the site for the Settlement been definitely decided upon before you were on the Board? Yes; I have taken an interest in it from the start. I know all its goings on, having been secretary of the movement.
4. You were a member of the co-operative committee which was responsible for the agitation which brought about the establishment of the village settlement? Yes; I was secretary of it.
5. And you have been in close touch with the whole movement from the beginning to the present time? Yes.
6. Who was responsible for the selection of the site for the settlement? It was recommended to Mr. Copeland, the Minister for Lands, by Principal Thompson, of the Agricultural College.
7. Are you aware whether any alternative site was considered by Mr. Copeland? Not that I am aware of.
8. Have you been up to the settlement? I have been there from the start.
9. Have you any personal knowledge of agriculture? No; we engaged an expert.
10. What is your opinion of the site as an eligible place to establish a co-operative settlement of this kind? The site was a bad one; but it could have supported forty families, provided they had irrigated.
11. In your opinion irrigation was essential to success? Yes; I fought for that.
12. Have you ever consulted any of the settlers in the immediate neighbourhood who were there prior to the advent of the Pitt Town men;—have you taken their opinion as to the possibilities of the soil up there without irrigation? I have spoken to those who were experts and knew something of it.
13. I mean the private settlers? I knew none of them.
14. I should like you to explain why, in your opinion, the settlement was a failure? I may mention that the village settlement was an experiment, and you will admit that to carry out an experiment you must have the best material. To my mind it seems to be in a nutshell. One question is: was the land suitable? and secondly: were the best men selected for it? These two questions are most material with regard to the matter. In my opinion, neither of these two requisites were to be found at the Pitt Town Settlement.
15. *Mr. Kelly.*] In the first place the site was not a good one, and in the second place the most suitable men were not selected? The men were selected at haphazard. I may mention that the committee of which I was secretary selected 700 men, out of which number ten or a dozen got through the Board of Control and the Labour Bureau. They would not go through the Labour Bureau at that time. At the start of the affair they seemed to have an objection to it. The men were persuaded by some of us to go  
and

J. Watson.  
2 Oct., 1896.

and try, but the whole thing, in the opinion of the majority of the committee of which I had the honour to be secretary, was that they were not selected in the manner in which they should have been; that is to say, the men who had established the movement and were partly responsible—in fact, on whom odium and ridicule had fallen—were not consulted with regard to it—that is to say, the selection of those who should go on the Board of Control and other things. Since then I have had to take my ideas from what I saw on the settlement, and what I learned in conversation with members of the Board of Control. When I got on the Board of Control myself it was composed of Civil Servants. I discovered that not one man except myself was in sympathy with co-operation. The Minister for Lands asked me to come in and help to save it from failure. Then I said it would do no good without water, and suggested two schemes for the supply of water. One from the lagoon some distance from the Settlement, and the other from Cadai Creek.

16. *Chairman.*] Do you attribute the failure of the scheme to the unsympathetic attitude of the members of the Board towards the principle of co-operation? My own opinion, gathered, not from hearsay, but from close observation, is that there has never been any intention to give the scheme a fair trial.

17. On whose part? I have not been able to discover, but there is someone in the Department who has been blocking the whole affair. I believe that both Mr. Copeland and Mr. Carruthers have been misled; but who the party is who misled them I have never been able to get at. I may relate my experience to the Board of Control.

18. *Mr. Watson.*] The Board of Control, of which you are a member, was the second Board of Control, composed almost exclusively of Civil Servants? Yes.

19. Then there was another composed of farmers and Civil Servants, who gave it up in disgust? As far as Mr. Taylor was concerned, I was met with the utmost courtesy; but by the others, when I first went there, I was never welcomed in any shape or form. Of course I did not mind that much, but I have been amongst illiterate men, and I have met with more decency, as I call it. I thought I was going amongst gentlemen, and I got amongst worse men, as far as that is concerned. I will simply say that not one man knew anything about co-operation or was in sympathy with it. I have had a theoretical knowledge of these things, and a little practice.

20. *Mr. Kelly.*] The other members had not much practical experience or theoretical knowledge? I was on the second Board of Control composed of farmers. I travelled all the way from Sydney once a month, sometimes twice a month, to attend the meetings.

21. These were farmers? Local farmers, exclusive of settlers. From inquiries at Windsor I was informed that the farmers have been opposed to the common being taken away from them. They knew no more about co-operation than the Civil Servants did, and they seemed to me to retard the progress of it. I should not like to charge anyone unless I was justified; but the selection of those men was very suspicious, and also their conduct afterwards. One of them, who is now Chairman of another Board of Control at Wilberforce, is a man totally unfit to guide or control men. I had the men at my command by just using a little diplomacy. He undid all the work that I had done by his brutality. As Chairman he stopped the rations of some of the best men, and he made the place a pandemonium. The forest thinning then came on, and the men went away broken-hearted. There has been something at work to undermine the whole thing.

22. How long was the second Board in operation? Two or three months. Of course it was in existence before I went there.

23. *Chairman.*] Do you think that if each settler had been on his own account the scheme would have been more successful? No. Of course that is a matter which has been unfortunately placed in a very queer position by the Press of the city. I have tried to put it straight, but they will not insert the letters. If this Committee includes the Wilberforce Settlement in their inquiries they would discover something ridiculously wrong there.

24. What we want to do is to find out the cause of the failure of the Pitt Town Settlement; if that is to be done by investigating the circumstances surrounding other Settlements, undoubtedly the Committee have power to do that? I will give one instance to show a peculiarity which will explain the thing for itself. Some time ago Mr. Butler, Chairman, stated at the Board of Control in Windsor that I had been in the Domain and spouting elsewhere, and writing to the papers complaining about the system, and they were going to invite two reporters up there and myself. Two reporters were invited. The reporter for the *Daily Telegraph* spoke of the two systems, condemned the Pitt Town system, and eulogised the Wilberforce Settlement. One settler came to me and asked if I was connected with the Pitt Town movement. I said, "Yes." He said, "Were you invited to Wilberforce?" I said, "No." The result was, I wrote to the *Daily Telegraph* contradicting a deal of their arguments, but the letter never appeared. This gentleman also stated to me that if it was known that he had come to see me they would find some means to throw him off the Settlement, as they did others who spoke their minds.

25. *Mr. Watson.*] Have they a system of individual blocks of land at Wilberforce? Yes.

26. Do they have any co-operative system as between owners of individual blocks? I believe they have.

27. Is it a system of volunteer co-operation? Yes.

28. Any one may assist if he pleases? Yes.

29. At this town it was not so? No. I may mention that I myself, although a co-operator, am quite willing that the individual system should be placed side by side with the co-operative. I endeavoured to get the remaining settlers, after some of them had gone to forest thinning and other work, to get their own blocks, and I assisted in it, but I did not succeed. Here is a copy of a letter that was sent to the settlers from Mr. Wilson, the Acting Under Secretary for Lands. This was when Mr. Carruthers had been speaking strongly about the place. I understand that Mr. Carruthers went there and told them that the place was unfit for settlement, and that he would have them shifted. That took a deal of heart out of the men. The letter is as follows:—

Sir,

Department of Lands, 29 January, 1895.

As it is thought that the opinions regarding the Labour Settlements at Wilberforce and Pitt Town with which the Minister has been credited in the daily papers may have had the effect of unsettling the residents upon these areas, and of reducing whatever energy they have been employing in connection with the various works upon which they are now engaged, I have the honor, by the direction of the Secretary for Lands, to inform you that, in carrying out any contemplated changes, the claims of the thrifty and industrious settlers will alone be considered; and in the event of it being decided to start similar enterprises under conditions more conducive to success, the opinion of the Board as to the merits of each individual member of the present Settlement desirous of a transfer will in the first instance be sought.

## SELECT COMMITTEE ON THE PITT TOWN SETTLEMENT.

I may also point out that no interference will take place with such of the settlers as desire to continue in occupation of the land when Government aid is no longer forthcoming, due regard being had to the necessity that may exist for a reduction in the area of the present reserve consequent upon the limited number of people that may desire to remain.

J. Watson.  
22 Oct., 1896.

(Signed) H. H. WILSON,  
Acting Under Secretary.

You will find that some of the settlers have received notice to quit.

30. *Chairman.*] Have not all of them? Every one that was there.

31. The settlement is practically now void? Yes; I resigned my position owing to what I discovered when I paid a visit to the town and was trying to get a few men to keep together and see if they could not make a living. They were nearly all men with very large families.

32. Did any settlers express a desire to remain under the conditions specified in the letter? Yes; between twenty and thirty.

33. How did they express it;—did they communicate with the Minister in the usual way? Yes; some as individuals. I believe twenty applied to be allowed to work co-operatively. I wrote to the Minister myself, backing up their claim individually and co-operatively.

34. The point to be made clear is this: This letter sets out that any man, when Government aid is withdrawn, who chose to go on would be allowed security of tenure; that is independently of the question whether they should or should not work collectively;—what I want to know is, was the Minister made acquainted with their desire? I believe so. Letters were sent by the settlers.

35. I suppose that any of the settlers who have vacated the Settlement would be able to prove that? Yes.

36. What was the reply of the Minister? That I could not say. It has been an evasive one, as far as I know.

37. You know that they were sent an order of ejectment? I have been off the Board of Control since these things occurred.

38. You have seen an order of ejectment since? Yes.

39. So it would seem that the answer of the Minister was unfavourable? Yes. I was going to mention the reason why I resigned from the Board of Control. It is a very important thing. Government money has been spent there and wilfully wasted. I wrote to the Minister for Lands stating my reason, and went up there to see how things were going on. In going past the orchard I found the pigs and cattle inside the orchard. I made immediate inquiries, and the men told me that they were all taken away into the bush wood-cutting, and they were told to let them go, but they fenced them up; but when they were away some one knocked the fences down.

40. Was the character of these improvements important? They were important because of the destruction of property. I reported the matter, and the Secretary of the Board of Control, Mr. Taylor, said he would lay it before the next meeting of the Board. I told him that he ought to have it stopped at once. I sent in my resignation because I saw that they were only lumbugging the men, and I would not be a party to it.

41. We want to make it clear, if it can be done, that this Settlement did not pay because of any inherent defect in the co-operative system;—if the Wilberforce scheme is going ahead, and a reason of that is that it is on an individualistic basis, do you think that a visit to Wilberforce would show how it was? It would show that it would require the expenditure of a fortune before it ever became important.

42. *Mr. Kelly.*] How many men are there at the Wilberforce Settlement? I could not tell you. I visited there once with an expert, and his opinion was that it was useless to endeavour to establish anything there. The cost would be something enormous, and the men who are on that Settlement are amateurs. Bega and Wilberforce have been spoon-fed by the Government to a far greater extent than Pitt Town.

43. *Mr. Dick.*] Do you know that of your own certain knowledge? Yes.

44. *Mr. Watson.*] They got more per head? I believe so.

45. *Chairman.*] Do you think that the Wilberforce Settlement is situated more favourably? No; there is no comparison. Wilberforce is a barren desert, and Pitt Town has patches of good ground; and the present area at Pitt Town, with water, according to the opinion of experts, could support forty families.

46. Was there any estimate of the cost of irrigation at Pitt Town? I believe there is one in connection with the Lands Department.

47. Did anyone refuse to do it? The reply of the Department was that it would be too costly and would not suit.

48. Was the site of the Pitt Town Settlement worse than the land of the surrounding Settlements? There were not many settlers about there. They were further on the flats. It would have been better if the settlement had been by the creek.

49. It was badly selected? Yes.

50. And was there excessive niggardliness in regard to funds on the part of the Department? The money was doled out to the first Board of Control in such a manner that they were unable to hit out. They were the people who recommended irrigation, but they were told that it would not suit.

51. *Mr. Kelly.*] I suppose that by this the Department began to see that the site was an unsuitable one;—do you think that was the reason? The committee, of which I am secretary, thought it would be a splendid ground for training people who had no knowledge of farming or agriculture, and that they could be drafted off into suitable places. That is what we recommended at Pitt Town to the Minister for Lands—that it should be used as a labour farm, where men would go and learn farming as they are doing at the Hawkesbury College. It would have been suitable for that. An expert stated that the amount of work that was done in the first eighteen months was marvellous—clearing was done, dams were sunk, and fencing was done. No one has contradicted that statement. In the first season rain was plentiful, and every settler had all his own vegetables, and the cattle were being fed; but afterwards—the second year—the seasons were bad. It seemed to rain everywhere but at Pitt Town. The result was that the settlers had nothing in their garden. It cost £10 a week to feed the cattle, and everything was in a bad state. I never thought that the men could do the work which they did, and they were men who had never seen one another before.

52. *Chairman.*] There must have been a few black sheep; but do you consider that the majority of the men were hardworking, industrious men? They were really first-class men.

53. Of course care was taken in the primary selection? That I could not say.

54. As a matter of fact, is it not generally considered that farming is not immediately remunerative—not for the first season or two? Yes; it is seldom remunerative on poor ground, for several seasons.

- J. Watson: 55. The Minister should have known that for the first year or two it was an experimental effort, which could hardly be expected to be self-supporting. How long was it before the Minister withdrew his protection from it? I understand that the present Minister at his first visit took the heart out of the men by telling them that he was going to find a better place for them, and they said what is the use of working when they were told that they were going to be shifted. Of course I insisted that they should do their eight hours a day, and they did it. I do not think the Minister for Lands thinks the place at all suitable, and he has never shown a desire to carry it on.
56. Do you think that better results would have been achieved if there had been a mixture of individualism and co-operation—if each individual could have had so much land of his own, and had had something in common with the rest of the settlers? Not at all.
57. You don't think there was any loafing? I have not seen any myself. There have been charges in regard to that.
58. So you regard the failure as primarily due to the bad site, and, secondly, to the total lack of sympathy on the part of members of the Board of Control, and, thirdly, to the want of irrigation? Yes.
59. But in spite of that, twenty families would have been able and were willing to stay, and would have made a respectable living had they been permitted? There is not the slightest doubt about that.
60. *Mr. Kelly.*] At the time the Minister visited the Settlement and made this statement, how many men were on the place? Between eighty and ninety families.
61. Did he take any steps to carry out that promise? I believe not.
62. And it took the heart out of these men? So they say.
63. From that time I suppose the Settlement began to dwindle? I managed to get it up a little bit, but when Mr. Butler became Chairman he disorganised the whole body. The women were going to throw him into the dam. It shows the state that he put the place into when he suspended five men. When I went to inspect the work I found it all first class.
64. You regard the incompatibility of the feelings of the later Board towards the selectors as one of the causes of the failure of the Settlement? It was the principal cause of what has been made much capital of outside—that is to say, that the men killed the settlement. I say that they did nothing of the sort. Had the men been treated as they should have been the two or three objectionable ones that may have been there could easily have been got rid of.
65. What has become of those eighty or ninety men who were there? Some of them went forest-thinning.
66. How many went forest-thinning? Thirty or forty families. I could not say exactly.
67. They were drafted out by the Government? Some left the Settlement, but there are families, I believe, there now. Twenty wished to remain and to hold their land co-operatively. One man wrote to me from Gannain, in the Narrandera district, asking if I could get a piece of Government reserve for them to settle upon.
68. *Mr. Watson.*] As individuals or co-operatively? Both; I was inundated with letters. They all looked upon me as Job's comforter.
69. You say that you wrote to the Minister for Lands? I wrote to him, and I got all the information that I could. I received a communication from the department to say that the leases for that place would not be up in time, and that the men would have to go to ballot for other places the same as anybody else.
70. *Mr. Kelly.*] Do you know the state of the majority now at Pitt Town? No; I have not been there for the last six months.
71. Is there anyone in charge? I believe there is a Mr. Hutchison in charge.
72. The site has been handed over to the Labour Department? I believe there is a superintendent in charge.
73. *Chairman.*] I have a letter from Thorhmah;—do you know him? Yes.
74. He states that he supported himself, his wife, and family by getting firewood prior to being driven off the settlement. On his  $\frac{1}{2}$ -acre block he kept poultry, and it was of great assistance to him, and by means of this help he was able to live; but since he has been driven off the settlement into Windsor he is no longer able to live by getting firewood, and he is destitute, and this he attributes entirely to the conduct of the Government in ousting him from the land;—is that the case in reference to these settlers? I believe so.
75. You think it would have that effect? There is a number of them about town who can get nothing to do, and who are worse off than ever.
76. He says, "If we had been allowed, we would have stopped and eked out a living, no matter how precarious"; also, "God knows that the Pitt Town settlement was large enough for those who were willing to accept a small part";—do you regard the department as being very harsh? Yes.
77. What they did was extraordinary and inconsistent in the face of their letter? Yes.

William Musto called in, sworn, and examined:—

- W. Musto: 78. *Chairman.*] Were you one of the first settlers at Pitt Town? No; I went up there about six months after it started.
- 22 Oct., 1896. 79. What do you know about this matter? I went there on the 29th December, 1893.
80. You are a married man? Yes.
81. Were you put to very great inconvenience, not to speak of hardship, by your ejection by the department? Very much.
82. Would you have been able to get a living if you had been allowed to stay on the land? I believe we could have got a living quite as well as the people in the district.
83. How much land had you fenced-in and cleared? About 2 acres fenced, and 1 acre cleared and trenched. Before I went up there I had to appear before the Board in Sydney, and I was told that I should have an allotment of about a quarter of an acre; and I was given to understand that I could do what I liked with it, to improve it under certain conditions laid down by the Board. It had been previously occupied by a settler, who vacated it. Although there was nothing done on the ground when I took the land, as soon as I went there I set to work and grubbed it thoroughly, taking out every stump and every tree. I went up there with the full determination to try and make a home for myself and family. When I got there I saw that there was trouble. They were trying to eject a man for some misconduct, and the place was in an uproar.

uproar. I took no notice of that. I was very anxious to settle down, as I had gone there for that purpose, to make a home for my wife and family. I had no ambition to take any part in the deliberations of the committee. I tried to keep even away from that, and put all my time in improving my surroundings, and I did so to a very large extent, which was admitted by the people in the district.

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84. *Mr. Watson.*] That was work done by you outside the time when you were working for the Settlement? Yes. I may say that I could be seen working with a flare light up to 9 o'clock at night, and always taking advantage of the moonlight nights and Sundays.

85. Each man was expected to keep his own allotment in order, and to grow vegetables, doing his own work after his eight hours' work on the settlement? Yes; and, as it appeared to me, a man was foolish who did not do that. If he did it, it helped himself and helped the Settlement. By growing enough vegetables for himself, he required less from the Settlement. From some of the men I should say that a bad choice was made in the selection, and there were men who were so avaricious as to grasp everything they could lay their hands on. We had to sign a document pledging ourselves to do certain things, and if we failed to do that the law was stringent enough to deal with us severely. I think the authorities were to blame for not having more firmness in enforcing the regulations. I put in a very comfortable nine months there. Although we had no money, we had plenty to eat and drink. I am not a strong man, but I have a certain amount of intelligence, and what I lack in strength I make up for in other ways.

86. *Mr. Kelly.*] Were there many who improved their land? Yes.

87. What proportion of them? Fully half of them. I tried to encourage them. I was put to work in the gardens, although I had no previous knowledge of anything of the sort. They looked to me to try and settle them, and to the best of my ability I did it. There were men who, no matter how hard you tried to encourage them, did no good. We went to work fully determined to adhere loyally to the Board, and to carry out their regulations, which we did, though in a number of cases very much against our own judgment. But we had to recognise a head, and we knew that if we did not things would be a good deal worse. There was a great deal of difficulty in getting the money that was wanted.

88. *Mr. Watson.*] That is the money sent to the Board of Control;—the settlers got no money, did they? The settlers had no money whatever—only rations. My allowance at that particular time was 14s. worth of rations a week.

89. That is on the basis of so much for each child and for yourself and wife? Yes; 1s. each for five children.

90. That was 5s. to the children and 9s. for yourself and wife? Yes; of course, whilst things were plentiful the place went on very well, although enemies of the movement tried to make out that the men were lazy, and always fighting amongst themselves. I made it a point, whenever I saw a stranger on the Settlement, of ascertaining what he thought about us—whether he thought we had done what we ought to have done for the number of men there, and the answer always was that we had done good work.

91. There was a tremendous amount of labour lost in conserving water? There was virtually no water when we went there.

92. *Mr. Kelly.*] You have left a permanent supply of water there? Yes.

93. *Mr. Watson.*] How many dams were put in by the settlers? I suppose six or seven dams, some of them very large ones. I suppose that, altogether, their carrying capacity is about 10,000,000 gallons.

94. Do you know how many acres of land were cleared by the settlers and cultivated? I should think about 500 acres were cleared.

95. And a lot was cultivated? Yes.

96. And there were some miles of fencing? Yes, about 40 miles of fencing.

97. That is ring-fencing and subdivisions? Yes, chock and log, and some posts and rails. That was independent of the settlers' own fencing round their allotments. Then there was a sawnill put up.

98. And a dairy? Yes; that kept one man going all the time, and there is a certain amount of labour expended in building a church.

99. Anyhow, they had to put up their own buildings? Yes. As far as I could make out, before I went there the Board had been unfortunate in the selection of the superintendent, who was a man who drank. He was continually the worse for drink, and had to be shifted on that account. Then one of the men was appointed—Mr. Waite—although I do not think he had much previous knowledge of the business. It seemed to me, when I went there, that the men, for some reason, had taken a very strong dislike to him, inasmuch as he did not seem to show the amount of firmness that was required to govern such a large body of men. They were sent out into the bush to look after themselves.

100. *Mr. Dick.*] We wish to find out why these Settlements are successful in some places and unsuccessful in others;—do you think it would be a good thing for the Committee to go to New Zealand and examine the settlements over there? As far as my experience goes, not having given the question a great deal of consideration before I went there, I should not hesitate to go on a similar undertaking, provided that there was a better selection of men made to form the settlement.

101. What about the settlement over in New Zealand? As far as I have been able to gather, there are some settlements there on different lines. I will give one instance with which I happen to be acquainted personally, to show the class of men that are put on. I was at one time working for the Harbours and Rivers Department, and when I went to the Pitt Town Settlement, to my surprise I found that a man with whom I had worked in the Harbours and Rivers Department was there. He was a man who would drop his tools and go off to some other department, and not the slightest notice would be taken of him. The man was insane, but he had influential friends. On the Pitt Town Settlement he was sent out burning off, and on the hottest day in summer he would come to work wearing a coat down to his heels, but with no shirt on. When he was burning off rubbish he would have about 100 small fires all around him instead of one big fire, and he would leave all those fires and walk 2 miles back to his hut to get a match to light his pipe.

102. *Mr. Kelly.*] There was no proper selection of men? No.

103. *Mr. Watson.*] What number of men would there be there who would not do a decent day's work? A very small proportion. Then you have to take into consideration that the people in the district were up in arms against the settlement coming there at all.

104. The farmers of the district that had previously had the use of the ground as a common, free of charge? Yes.

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105. *Chairman.*] To what do you attribute the failure of this settlement—to the bad site, the want of irrigation, or the lack of sympathy on the part of those who were on the Board of Control, or do you attribute any part of it to the co-operative principle;—do you think it would have been better if there had been no co-operation, but each had had his own land? The bad site had something to do with it.
106. Do you think that if the land were irrigated the Settlement would have been more successful? I do.
107. Do you think the management and the Board of Control, by their unsympathetic attitude, had anything to do with the failure of the settlement? I am confident of that. The whole thing depended on the way the regulations were administered. Had they been administered firmly, it would have stopped a great deal of irritation, and had the money been forthcoming when wanted.
108. Do you think that the Settlement would have done better if it had not been on a co-operative basis than if each had been on his own account? Under the circumstances no doubt it may have been.
109. *Mr. Kelly.*] Co-operation had nothing to do with the failure? I do not think that co-operation had a fair show. It appeared to me that the authorities were over-anxious to kill it from its inception. That is what appeared to me as one who had not studied the question of co-operation at all, but who had signed an agreement to honestly carry out the principle. That is my honest conviction. I believe that the authorities were over-anxious, backed up by the people in the district, to kill the thing.
110. *Chairman.*] In reference to co-operative schemes in general, you regard it as of first importance that the men should be of the right sort? I do.
111. Were these people of the right sort? No.
112. In what way were they lacking? They seemed to have picked them up in a haphazard way.
113. You believe that with a proper selection of men the co-operative principle on a good decent site would be a success? Yes, I do.
114. *Mr. Watson.*] Were you one of the men who stayed there to the last? I was.
115. Were you there when the letter was received from the Under Secretary for Lands to the effect that those who were there would not be disturbed? Yes.
116. And the men in consequence of that regarded it as a certainty that they would be left there? Yes. I myself went to work again on that permission. Some forty of the men had left at this time, and we got permission from the Superintendent, who was the official mouthpiece of the Board, to enclose a larger area than we had previously held. We did that and put stuff in the ground, and although it was acknowledged that some of us were on the worst ridge in the whole district I was able to produce almost any vegetables.
117. After doing all this you were ejected and refused permission to remain on the land? Yes, distinctly told by the Minister in person that if we did not leave—he told this to my wife—the roof would be taken off our house.

TUESDAY, 27 OCTOBER, 1896.

Present:—

MR. KELLY,  
MR. O'SULLIVAN,

MR. DICK,  
MR. O'REILLY.

W. M. HUGHES, ESQ., IN THE CHAIR.

Harry Packwood called in, sworn, and examined:—

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118. *Chairman.*] What connection have you had with the Pitt Town Settlement? I was there as a settler almost from the first inception, or from within fifteen or sixteen days of the time it started.
119. How long is it since you left the Settlement? I left it twelve months ago.
120. Were you compelled to leave it, practically? I was compelled; there was nothing else for me to do. I could either do that or go forest-thinning; but I did not go there to thin forests, I went there to make a home for myself and family.
121. Would you have been able to make a home if you had been allowed to stop there? If I had been allowed my own way, I should have had a home for myself, and have been there now.
122. Were there many other settlers in the same position as yourself in regard to that? Yes.
123. Do you consider that the action of the department was prejudicial to the interests of the men as well as to the idea of co-operative Settlement? We were not allowed to do or have a say in anything. We had to carry out what we were told to do. If we were told to climb a tree we must climb it; but when you climb a tree too often it does not do.
124. Can you fix the blame upon any particular individual? I could not do that. First, the soil was very poor; but if we had had proper management it could have been made very different from what it was. I am only basing my ideas upon my own little plot of ground. I could have grown nearly anything had I been allowed.
125. Did anyone stop you? I was given the idea that if I grew a certain amount more than I required that they would have to go into the communal property, the same as bees were ordered.
126. Information has been given respecting men who were getting a living by cutting firewood whilst they had those little plots of ground, and that they were just able to make a living, paying no rent, but that being turned off the Settlement they are now practically destitute;—were you one who cut firewood? I cut many hundreds of tons upon the Settlement. When it was on its last legs, as a settler I did nothing but cut firewood—from the time that the saw-mill, which was a white elephant, was erected, and it was only fit for the scrap heap, as it was obsolete.
127. Do you consider that the failure of the Settlement was due to the principle of co-operation? No; but I do not think co-operation can be carried out with such a large body of men as were there. If you had up to twenty men, you would have a better chance. In the Settlement I could pick out twenty men that I would have faced anything with. There are a lot of men of the same principle as myself—nothing in the shape of work daunted them; but if you are connected with a man who cannot do his work it is not encouraging.

128. You do not think that the principle of co-operation can be successful unless each individual has an opportunity of selecting his men? There should not be more than twenty, and there might be as few as six men. H. Packwood.  
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129. Why do you believe that twenty men should be the maximum? You would be better able to agree with twenty men than with 100. You would know every man's faults and his temper; but where you have a great number, some old and worn out, and others disabled, some of them are so crotchety that you cannot get on with them.

130. If the soil had been better, and the principle of co-operation had not been so recklessly applied, even then trouble would have crept in? It did come from the very first. A certain class of men there wanted to domineer over the others. If you had only a small number, you could exclude objectionable persons, and you need not allow certain persons who are actually drones to domineer over the others.

131. Do you not think that the work may be done very much more profitably with combined labour than by individual efforts? Undoubtedly I do.

132. If a man has capital, and can employ a number of men, it is a matter of indifference; but if a man has no capital, the only way to remedy it is to combine with his fellows to get the labour done? I went to the Settlement to make a home for myself and family. I had every expectation that it would be a success. I thought that the larger the number there the better, but when I got there I found it was otherwise.

133. What number of drones would there be? I should say about 25 per cent.

134. *Mr. Kelly.*] Your idea was that they were unsuitable for the purposes of co-operation? You could not say anything. If you saw a man, and you knew that he had not done a fair day's work, you could do nothing on the subject, because they said they had done their best. An individual employer would have exacted more labour, or have turned them adrift. But we could not do that with the bad settlers. You could not turn a man away, although you knew that he did not do sufficient work, as long as he said that he did his best. No doubt they did; but some of them were not fit to be there. I recognise that in pioneering you want the bone and sinew of the Colony to make it a success. When I was clearing I hurt my back, but I do not think they believed that I was sick, though I really was. Another man could be laid up for four or five days, and we were told that he was actually sick. They would not believe that I was sick. Had there been a strong man instead of a poor weak man to take my position the work would have gone on, but as it was my place was vacant. You could not put an old man in my place.

135. *Chairman.*] Do you think the management could have done away with the difficulty by efficient supervision? Yes; if we had had a man like Mr. Tresseder, or Mr. Vaughan Jenkins, who I admit had a failing. If Mr. Tresseder had been there he would have made a difference in the Settlement. One of the great faults of the place was favouritism. As soon as the superintendent was appointed to fill Vaughan Jenkins' place he appointed foremen. There was no necessity for that, and as soon as the men got to be foremen there was a little officialism, although we all went there equal to each other. When men were put over others then they started to talk, and if a man was a boss of a gang he seemed as if he were an employer of labour. If you made a remark you were reported to the Board, and you were accused of grumbling, and a person does not like to be always grumbling. If we had had Mr. Taylor at the head of affairs, Mr. Stanley, or Mr. Watson—some officer to whom the men would have listened, or stated their grievances—a better state of things would have resulted.

136. *Mr. O'Reilly.*] What do you mean by saying that a man spoke to you as if he were an employer of labour? I was doing my best. We were all there on equal terms. An employer, if he thought I was not doing sufficient, would say, "Hurry up there; I want you to straighten yourself out a little bit." This man was exactly the same, but he took good care that he did not do the work himself.

137. Do you not think that some guiding authority, even if elected by yourselves, is necessary in a concern of that sort? Had we elected these men we would have abided by the result with pleasure.

138. *Mr. Watson.*] Do you think that if you had had a say in the election there would have been more obedience shown? Yes; and we should have got a far better class of men, I am sure. I was put a short time on the huts, and there were two carpenters working on the huts who had been taking contracts in the city to the amount of £7,000 or £8,000. A bricklayer's labourer was put over them, and he was telling them how to build the huts. I think that was wrong. When putting up these huts we began one at 9 o'clock in the morning, and we put up three huts, each four hands taking seven hours, frame work only. Our idea was to get everybody housed as soon as possible. But as soon as it was found out that we were getting the huts put up so rapidly we were knocked off, and somebody else was put on. I came to the conclusion that we were doing it too rapidly. That work was going on day after day after that for nearly twelve months, and it got to be a saying on the settlement, "One nail, one slab, one day." A man was working with me named Dunne, and I reckon that ten days or a fortnight would have been sufficient for us to put up those huts; but a number of men were employed on them for nearly twelve months.

139. *Chairman.*] Do you think the work would have gone on faster and better if the men had selected their own overseers? I do.

140. Do you not think that the practice of selecting your own overseers, and thus making the overseers dependent upon the goodwill of the men, might do away with the tone of authority which an overseer might use to those under him? The idea of co-operation was that we were all to work for each other. If a person goes with that idea it requires no tone of authority; it is every man trying to do his very best.

141. That idea did not answer in New Australia, because people will not work for one another? That body of men was too large, which proves that 100 was too large to co-operate.

142. You believe in co-operation if proper persons are selected to carry it out? Yes; with a certain limit as to the number. Some men might work well together, whilst other would not.

143. Then you believe that men should be selected who have an affinity towards each other? Yes.

144. Do not you think that good faith is required and good discipline? Yes, and somebody at the head who will act fairly. That is where we failed. Our great failure was owing to favouritism. There should have been a man at the head who could command respect. They do not require to use severity.

145. *Mr. O'Reilly.*] If the only severity was to tell you to "hurry up," would not your own selected overseers be bound to use the same language to you? If the men had elected an overseer they would have worked more amicably with him.

146. That is to say, he would have done more—what you wanted? I will just give you an example: I was working with a gang of men log-fencing, and the men could not put up more than sixteen panels a day—

H. Packwood. day—nine men and two horses. Another man used to come when the head of that gang was sick and take charge, and he could knock up twenty-two panels a day. That shows that he worked amicably with his men; but the other man always had a little dodging round in the bush, getting the lines straight and doing siding; but the other one went to work in the same way as the other men—with his axe.

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147. *Mr. O'Sullivan.*] You admit that a man can only do his best;—possibly the man who was "doing siding" was doing his best? That may be; but as he had so much to say we did not think so.

148. *Chairman.*] Here is an important thing: In a privately-conducted enterprise if a capitalist undertook the work he would put at the head of it a man who had some acquaintance with that sort of thing—an expert—and the thing would have been a success or a failure, according to whether there was sufficient capital, whether the ground was suitable, and whether the man put in authority was of the right sort. According to you, none of these were important conditions were there—the ground was not suitable, there was not sufficient capital, there was no irrigation, and the persons in authority were totally incapable, so that practically it is not a test that has proved the failure of co-operation, because, under these conditions, individual effort would have failed also? Yes.

149. Could anything have made it a success under the conditions of the soil there? Not financially, but it would have shown better results.

150. Could anything have made it a success with the kind of overseers you had? I am doubtful.

151. Even supposing it was individual effort, instead of co-operation, it would fail equally? Yes; but it may have been better carried out, no doubt.

152. This is not to be regarded as the failure of co-operative efforts, but as the failure of one of the methods by which co-operation has been applied? Yes.

153. You say that there should be no promiscuous gathering of men with only one thing in common—namely, their distress—put upon bad soil, with overseers conspicuous for nothing so much as their incapacity? Certainly not; and that to expect co-operation to be a success under these circumstances is monstrous.

154. What do you think of the causes of the failure of the settlement? I should say the first cause was bad soil.

155. What do you think was the second and the chief cause? Want of water. We had a suitable place for irrigation. We got 25 acres bordering down to the Long Neck Lagoon, and we ought to have had a Tangeve engine and pump. One was offered, I believe, for £200. I could have run half-a-mile of pipes myself down in a day, and when we came to a road we could have put them under the road, and put the water right through to the proper site, all on the estate.

156. What do you think was the third cause of the failure—bad management? Yes. But we had so many managers—one management did one thing, and another management did another thing, through gross ignorance. Each wanted to do just the contrary to the other. The greatest show of any management was by Mr. Tresseder, who came on the place, and, I believe, had the good will of all the men—at least of 75 per cent. of them. He was the most practical man we had. If we had had him from the beginning there would have been a Pitt Town Settlement now, and not a dreary waste of desolation as it now presents.

157. Did the men work harmoniously under him? Yes.

158. They recognised him as a man who understood his business? Yes. He walked over the soil, and he said, "I will put tobacco here," "I will put lucerne there." He looked at the soil, and he knew what it would produce, and was considered by the industrious settler the right man in the proper place, but a terror to the drones.

159. Have you had any practical experience of agriculture prior to this Settlement scheme? My only experience of agriculture was when I was a lad. I belong to an agricultural family; all my mother's people are farmers. My father has been for some years—over thirty years—head gardener for Sir Bernard Semuelsen—and I worked on a farm. I often thought that I should like to go in for producing Turkey rhubarb; I saw the inception of that industry by a man and his wife. It is an industry that grew until eighty or ninety people were working at it. The rhubarb grown was sent to Turkey, and afterwards sent back to England as the real Turkey rhubarb. Opium poppies (the large white) were also grown. I have seen hundreds of acres of them, and acres of henbane, which is considered a noxious weed here; also liquorice roots and roses.

160. Do you think that any of these things could be produced upon such a Settlement as that at Pitt Town? I have an idea that they could. I should have gone in for an acre of them to see how the soil suited if I had stayed there and been allowed. I would have found out what constituents these particular things took from the soil—whether oxygen, carbon, or potash. I should have gone in for tobacco growing and drying, and the drying-house would have been suitable for drying rhubarb. Of course these industries could have been started on a small scale at first.

161. Were there many men on the settlement with a prior knowledge of agriculture? I think there was a pretty fair sprinkling.

162. Were there any who had had experience of brickwork? Yes.

163. You say that 75 per cent. of them were decent, hard-working, reliable men? They were when I went there first. I never saw a better body of men than they were to stand up in a field together. And the Pitt Town and Windsor people admired the men very much, yet we came to an ignominious failure—not our fault though.

164. I suppose that the conditions under which they lived had a material effect upon them? It had. I was a walking ragman. The only things that I got there in the shape of clothes myself were one flannel and a pair of socks.

165. *Mr. Watson.*] Do you reckon that your experience there was of any value to you? I do.

166. How would it be of value to you? First of all, I never had much experience of clearing before, but I reckon now that I could clear with anybody. I never knew until I heard Principal Thompson tell us that all plants have food to live upon, and that feeding plants is exactly the same as feeding birds. They each require different foods to be a success. These things must be worked out scientifically, and must be looked at straight in the face to be a success.

167. You think that all you have learnt will be of value to you in the future? Yes; if I can get an opportunity to use my knowledge, but I do not see much show of it at present.

168. *Chairman.*] You emphasise the fact that in spite of the drawbacks you could have got a living if they had let you alone? One or two of us might, to the disadvantage of other settlers. I have always made

a hobby of poultry, yet I was not allowed to go near the poultry farm. I have been the colleague of one of the most successful breeders of game fowls in the Colony for over ten years. The Superintendent gave orders for me to make out plans of a poultry yard. Then they put another man into it. The poultry were taken ill, and I told the man what would cure them, but he would not listen to me. They were in a disgraceful state, and the Superintendent should have looked after them, but he did not, and to save the lot from dying they were drawn for in lots by the settlers, by order of the officials.

H. Packwood.  
27 Oct., 1896.

William Reginald Stanley called in, sworn, and examined:—

169. *Chairman.*] What are you? I am a clerk in the Lands Department, at present in temporary charge of the Rabbit and Labour Settlement Lease Branch.

W.R. Stanley.  
27 Oct., 1896.

170. Were you secretary of the first Board of Control of the Pitt Town settlement? Yes.

171. Were you brought into intimate connection with the members of the Board and with the settlers? I was.

172. Do you know anything of the settlers? I know the majority of them fairly well.

173. What is your opinion of them as a body; Mr. Packwood has stated that when they first appeared they were regarded with astonishment and admiration by the surrounding settlers, and that they were a fine body of men? They varied very much; they were an assorted collection. There were some very fine men amongst them, and some very inferior men, both as to physique and brain power.

174. Do you think they were suitable for the business they were engaged in? Some were and some were not.

175. What percentage of them, do you think, would be suitable? I think, with regard to the selection of the men, that a more searching inquiry into the antecedents and characters of the men to be enrolled as members of the labour settlement should be a *sine qua non*—a condition precedent to enrolment.

176. *Mr. Kelly.*] You consider that men should not be taken haphazard? Certainly not.

177. *Mr. Watson.*] Are you able to say what percentage of those men were unsuitable? I should say that about 25 per cent. of them were unsuitable.

178. *Chairman.*] Do you regard the experiment as a failure? No; I cannot say that I do, altogether. I think it has been a useful experiment, and from the experience gained here and by Queensland, New Zealand, South Australia, and Victoria, with regard to village settlements, a good system of village settlement might be eliminated.

179. Was not this experiment carried on under conditions which practically militated against its success, and if these conditions could be avoided in future might it not be successful? No doubt many of them could be avoided.

180. The character of the soil is admitted to be bad; what do you think is the chief reason of the failure of the Pitt Town Settlement;—was it owing to the men, the managers, or the Board of Control? It is hard to say.

181. *Mr. Watson.*] It is a fact that the management was unfortunate, in so far as it was frequently changed? The constant changing of superintendents was an unfortunate necessity.

182. The management;—there were three Boards were there not, and three superintendents? There were three Boards and four superintendents.

183. *Mr. Kelly.*] Why were the changes made;—was it on representations from the men or from the Minister? In one instance the superintendent was removed partly at the suggestion of the Minister; but if that suggestion had not been made, the Board would have taken steps for his removal. That was Mr. Tresseder. The Board contemplated his removal, owing to certain charges that were made against him.

184. *Mr. Watson.*] Have you got the minute-book? Yes.

185. Have you the pass-book of the Board of Control of the Pitt Town village settlement? Yes.

186. From that, can you give the Committee an idea of how the money was paid to the Board of Control by the Department? Yes; I can supply dates and amounts.

187. Will you give the sums which were paid and the intervals between? On the 25th July, 1893, the first instalment was paid—a sum of £25, to meet the preliminary expenses of the Board. On the 1st September in the same year a further sum of £500 was placed to the credit of the Board. On the 29th of the same month the sum of £1,000 was placed to the credit of the Board; and on the 22nd December following a further sum of £791 1s. 9d. was paid.

188. In December, 1893? Yes. I can explain the odd sum. A payment had been made by the Department on account of the Board to the railway authorities for freight, and the advance of the Board was therefore less by that amount. The next advance, consisting of £250, was the 23rd February, 1894; on the 10th April, £250; on the 22nd May, £250; on the 6th July, £250; on the 24th August, £750; on the 29th September, £370; on the 29th November, £500; on the 14th December, £500; and on the 18th February, 1895, £750; and this was the last payment to the first Board of Control. The next payment, of £505, was on the 28th March; the next, of £750, on the 27th April; and on the 21st August, £250, which was the last advance received from the Treasury.

189. You have not got anything to show the expenditure in connection with that;—do you remember how much of that money was spent in plant and materials? I am afraid I have not got the balance-sheets here.

190. Up to the end of September, 1893, £1,500 was paid in;—could you give us any idea how that was spent? Unfortunately, the pass-book is no guide to it. It merely gives the numbers of the cheques and their amounts. It does not mention names. I have a general recollection of some of the items. There is an item of £105 19s., which was paid to a man named Kember for horses and drays. Another item, of £142 18s. 9d., was paid to Holdsworth, Macpherson, & Co. for implements, &c.

191. *Mr. Kelly.*] I suppose there would be iron roofing? No; there was not much roofing purchased. The only roofing purchased was a kind of black felt, which did not answer the purpose. That was got by Mr. Vaughan Jenkins.

192. What were the houses covered with? Bark.

193. *Mr. Watson.*] The felt was used for a few houses? Yes. Here is an item in the minute-book for the 27th September, 1893, about the time of the receipt of that £1,000. The amount of this item is £343. It was passed for the payment of accounts. I have a book here which will furnish particulars of such payments.

- W. B. Stanley. 194. Can you give the general tenor of these accounts, as to whether they are for provisions, implements, stock, or anything like that? On the 27th September a sum of £343 was passed on account of provisions. The bulk of this money was for the payment of accounts for material or provisions supplied.
- 27 Oct., 1896. 195. Not in the way of plant, speaking generally? In the various statements that I have prepared, all implements—picks, shovels, and articles of that sort—would come under the category of plant.
196. There are a number of items here in the book which you have produced;—there is an account, "George Waite," one for Holdsworth, Macpherson, & Co., one for Foley;—I take it that these are payments for food, tools, &c.? Yes, except Waite's, which would probably be for incidental expenses.
197. I notice an amount of £546, under date 2nd August, 1894, D. Mitchell, Moses, Holdsworth, and Macpherson;—I take it that these items were for food and tools? Yes; there are four headings under which expenditure has been classed in the balance-sheets which I have prepared. Plant includes cost of all tools, live stock, waggons, ploughs, and everything which would be used in developing the settlement and of the carriage thereon. The next item is that of maintenance, which includes the purchase of food of every description, clothing, boots, carriage of supplies, flour, and so on. The next item is that of improvements, and under that heading is included all expenditure in the purchase of iron, ironwork, nails, timber, seed, and fruit-trees of every description. The fourth heading is that of working expenses, including salaries, wages, advertising, travelling expenses, and sundries of every description. With some of the balance-sheets there is an analysis made of the various items under the head of working expenses, including, in addition to the above, the cost of printing, stationery, travelling allowances, either to members of the Board or the settlers, carriage of parcels, and any other incidental expenses. These have all been analysed, but I have not followed out the same process with regard to the last balance-sheets. The expenditure has been less, and the inspectors did not require the information, and as I had more work than I could possibly manage I did not go into the question of analysis. The balance-sheets are all prepared, and my books have been audited by the Treasury inspectors.

WEDNESDAY, 28 OCTOBER, 1896.

Present:—

MR. KELLY, | MR. O'SULLIVAN.  
W. M. HUGHES, ESQ., IN THE CHAIR.

William M'Guire called in, sworn, and examined:—

- W. M'Guire. 198. *Chairman.*] You were a settler on this Settlement? Yes.
- 28 Oct., 1896. 199. From the beginning? From about a month after the beginning.
200. In your opinion, what was the cause of the failure of the Settlement? Bad management.
201. Will you explain to the Committee how this bad management showed itself principally? First of all when I went there we had a superintendent of the name of Jenkins, and he used to direct us where to go. We sometimes would be a couple of hours waiting around his tent in the morning, and he, whilst in bed, would direct us where to go to work. To the best of my opinion he was then lying in bed because of the effects of drink. I saw him on several nights drunk.
202. Do you think that if there had been better management the Settlement would have been successful? I could not exactly say that. There would have had to be more care in the selection of the men.
203. What is a fair percentage of the men who were fit for the Settlement? I should put it down at about 75 per cent.
204. You think that they were men who were suitable for the work? Yes; about seventy-five out of every 100 would be pretty fair men for the work.
205. Would that include malcontents, men who loafed and who would not work as well as those who were incapable of working? The best men never got any encouragement at all. Those who did were men generally who used to side with the superintendent. He did not care whether you worked or played—whether you laid down or not.
206. Which superintendent was that? Mr. Waite, the second superintendent.
207. He evinced really no proper care of the men there? No; if you let him alone, he would let you alone, and you could do whatever pleased yourself.
208. You consider the soil is all very bad? I do not think it is very bad. I think it is good enough for a man to make a living there. As regards the firewood I could cut between 4 and 5 tons a day, and I could have made a living in doing that, but I was prosecuted for it.
209. Have you had any experience of agriculture either here or at home? Very little.
210. Have you had any experience of bush-work? Yes.
211. Any amount? Yes.
212. You have had experience of rough general work? Yes.
213. You yourself were quite competent and capable of doing any work you might be asked to do? Any work I might be put to.
214. You regard, then, the chief cause of failure as being bad management? Yes.
215. Do you think that if the land had been irrigated, the Settlement would have been more successful? In my opinion there are plenty of people around there living on not such good land which has not been irrigated at all. There is one piece over 100 acres called a sheep station, which is lying idle, and which is as good land as you would get on the Hawkesbury, excepting the Pitt Town Bottoms, and which would grow anything.
216. Men running independent Settlements were capable of living on the same kind of land? Yes; not as good land.
217. And some as good as the Pitt Town Settlement? Yes.
218. Did you receive a letter from the Department of Lands, dated 29th January, 1895, as follows:—  
[Letter read]? Yes.
219. Were you led to believe by that letter that you would be permitted to stop there if you so desired? Yes.
220. As a matter of fact, in this other communication you say that you were getting a living by cutting firewood? Yes.
- 221.

221. Selling it to people in the adjacent town of Windsor, and so on? We sold it to the carters for 1s. a ton, and what they made afterwards was, of course, their own. W. M'Guire.
222. You were assisted to get this living by reason of the fact that you were paying no rent for your little holding, and only by paying no rent, and living as you were, you could get a living? Yes. 28 Oct., 1896.
223. As soon as they turned you off the holding you collapsed? They did not turn me off the holding. I am still in possession.
224. I believe you have a copy of a letter which you sent to the editor of the *Freeman's Journal*? Yes; it was published in the *Freeman's Journal*. It is as follows:—

Dear Mr. Editor,

Pitt Town Labour Settlement, 13 October, 1896.

I take the liberty of writing to you those few lines, in regard to how the Pitt Town labour settlers have been treated by the present Government. There is now remaining on the settlement seven settlers. I have now been out of work for this last two months, and a Mr. T. Curry, another settler, came to me and asked me to do a day's work for him, and he told me for to chop down an old fence that was enclosing his allotment, and that he would give me a day's wages for it. I then cut it down as he desired me, the fence belonging to him, that he erected in his own private working hours, which hundreds can testify. I may also point out to you that I wrote to the Minister, Mr. Garrard, pointing out to him that I and my family are on the verge of starvation, and I have had no reply back, asking him for permission to cut firewood on the Settlement, so as to keep myself, wife, and six children from starving, until such time as I can obtain work. I also asked him for work in my letter about a fortnight ago, and I have received no reply from him since. I also enclosed the summons to him, asking to know was it with his consent I had been summoned, but he only enclosed the summons back to me, with no reply whatsoever about work or permission to cut the firewood. I also pointed out to him that I only had earned 15s. this last two months to keep a wife and six children on. I may also point out that he has closed the public school on here, so as to drive the settlers off the place, there being more children here than the Act requires to keep a school. I also enclose you a copy of a promise that the present Minister for Lands has given us, and also the summons I received. I was fined 10s., and 6s. 6d. cost of Court; total, 16s. 6d., which I could not pay, so I had to go into Windsor Gaol for forty-eight hours. Now, Mr. Editor, I will leave you to judge for yourself how we have been treated, hoping that you will be kind enough to expose this in your valuable paper to the public at large.

I shall feel for ever grateful to you if you will be kind enough to forward on those correspondence to Mr. Hughes, M.L.A., as I am sure he will expose this in the House.

I remain, &c.,

WILLIAM M'GUIRE.

225. Do you know, of your own personal knowledge, that other settlers have been as harshly treated as you were—I do not mean that they have been sent to gaol, but that they have been turned off the Settlement? Yes; I know there was one, whose house was pulled down by Mr. Waite.
226. As a matter of fact, were the men told that, if they did not clear out, the roofs would be taken off their houses? I was not there at the time.
227. But it is common talk amongst the settlers who have remained there until the last? Yes.
228. About how many of you were willing to stay? There are only half a dozen families on the Settlement now.
229. How many were willing to stay a little while ago—were there not about twenty or twenty-five families? More than that, if they had got an opportunity to stay.
230. Did some of the settlers have enclosed places, with fruit-trees and cultivated blocks? Yes.
231. And did not the department by their foolishness allow cattle or something to get in and destroy some pounds worth of property? Yes; the garden that belonged to the whole Settlement was allowed to be treated in that way. The fences were broken down in all directions, and the cattle got in.
232. This was the result of many hours of patient labour on the part of the settlers? Yes.
233. And the cattle were allowed to get in? Yes.
234. What object could the department have in doing such a thing as that—had the settlers done anything particularly wrong, were they there illegally? Not that I know of. The only particular object they had, I think, was that there were a certain number of men who were left there, and got a saw-mill to see if they could make a living with it. I contend that the reason why they did not make a living with it was because they were only allowed a certain amount, no matter what they earned, and it was only a bare existence which they were getting. They were given no encouragement, and they only tried to earn that amount, and would not earn any more.
235. It brought them all down to one level? Yes.
236. You reckoned that you could get more working for yourself? Yes.
237. Do you consider that the department has dealt unnecessarily harshly with you? I do.
238. And that you could have got a living if they had left you alone? Yes; I am quite sure of that.
239. They say they want the land—what do they want it for? To turn it into a casual labour farm, I believe.
240. They say the Settlement failed, because the land was poor—what do they then want the land for? They cannot say that. They never gave any individual settler a chance to succeed. I could make a living there alone from rearing fowls and pigs if I were allowed.
241. Have you lost your faith in co-operation owing to this? Yes.
242. But after all you must admit that it did not have very much of a show? I must admit that.
243. With an unsympathetic department the co-operation did not have much chance? No; the men were not carefully selected enough.
244. One witness said yesterday that he would recommend that gangs of men who should select each other, and who would harmonise one with another should be taken, not more than twenty in a lot? I think that would be fair. If they were to know each other's working ability it would be better.
245. Do you think that any scheme would fail if men were taken haphazard? Yes; if they were brought together as strangers I do not think it would ever succeed.
246. Do you attribute the failure of the Settlement to the unfitness of the men, or to the badness of the management? I put it down chiefly to the bad management.
247. Do you think that if another co-operative scheme were suggested, under which the men were more carefully selected, and if the management were better, you, would be inclined to throw in your lot with them? I would if I knew the working ability of the men.
248. Do you think that the department had any real sympathy with the scheme? I do not think so, for I have written dozens of times myself to both Ministers.
249. They spent some £8,000 on the Settlement from beginning to end. I suppose you are aware that the greater portion of that money was spent on mere "tucker," just keeping the Settlement going, feeding and providing plants and tools for the Settlement? I do.
250. In short, there was no capital available for production? I do not think they were ever self-supporting.

W. M'Guire. 251. Have you written to the department in reference to your being put in gaol for wood-cutting? No, I have never written to Mr. Garrard about that; but lately I wrote to him asking for permission to cut firewood. I shall have to go to gaol again for cutting firewood if he does not give me permission. This is the reply I received. I did not ask for permission to cut firewood on the Settlement, but any place where he would let me, no matter where it is.

28 Oct., 1896

252. You wrote to the Minister then and he replied? Yes; he replied as follows:—

Sir,  
Department of Labour and Industry, Sydney, 16 October, 1896.  
In reply to your letter of 5th October, again requesting permission to cut wood, or for work on the Pitt Town Labour Settlement, I am directed to acquaint you that the Minister for Labour and Industry cannot see his way to grant your request.

I have, &c.,

T. B. CLEGG,  
Clerk-in-charge.

Mr. W. M'Guire, Pitt Town Labour Settlement.

253. He could not see his way clear? No. I reckon that if he is keeping it for the unemployed, I am one of the unemployed.

254. Mr. O'Sullivan.] What is being done with that land now? They are not doing anything with it at the present time.

255. Have they turned all the old settlers off? They have all left themselves, excepting the six families there now.

256. What are they doing? Living there—that is all.

257. Are they cultivating the land? No.

258. Did the department turn you off? No; they gave me notice to quit some ten weeks ago, but I did not leave.

259. They are going to utilise the land now for a casual labour farm? Yes.

260. You said, in reply to the Chairman, that there was a want of sympathy on the part of the Governments with the Pitt Town Settlement? Yes.

261. Was that want of sympathy exhibited by both Governments? In regard to Mr. Copeland, I should say that he could have taken steps to see that there was a proper man at the head of affairs. Even if the Board of Control were not practical men, things would have been better if the settlers had had a practical man over them.

262. But Mr. Copeland did appoint a Board of Control? He did; but I do not think there was a practical farmer on the Board.

263. Did they not exhibit some sympathy with the Settlement? Yes; but the superintendent was only a navvy.

264. Who appointed him? The Board of Control. We drew Mr. Copeland's attention to the matter and held several meetings to see if we could get a man appointed who was an expert at that work.

265. Did you complain to Mr. Carruthers when he came into power? Yes.

266. Did he take any steps to make matters better? No. I have written to him often about the road work. The superintendent used to put labouring men over the carpenters, and he put a brickmaker over the navvies doing the road work. Men who did not know anything about the jobs he put over men who had had experience in such work, and things went to the bad.

267. The men put over the Settlement appear to have been appointed, not for their fitness for the work, but for some other reason? I think it was through influence, and nothing else.

268. You say you have had a taste of co-operation, and would not care to go on again with it unless you selected men as colleagues? I would have to know the men's working ability before I would go on again. I should expect that every man would do as much as I did, or very near it, otherwise it would be only crushing me between the lot.

269. But what is to become of all those who could not come up to your standard? Let them have a Settlement of their own.

270. On a lower standard? Yes.

271. Do you not think that if that plan were carried out you would have one portion of the community worse off than another portion, and you would gradually develop into an aristocracy? I do not see that.

272. Judging by your physical capacity, I should imagine that you would be one of the first selected? But I would have to work harder to get that.

273. But your lot of good men would be getting richer than another lot, who were weaker men;—would it not be a better plan, for humanity as a whole, to intersperse the men and let some of the stronger men take the weaker men with them? There was too much of that there.

274. What is the conclusion that you have arrived at after a trial of co-operation;—do you think that it is absolutely essential to have a strong and abiding faith first in the principle of co-operation? Yes.

275. And then to be amenable to discipline in order to give it a fair trial? You may be a very strong co-operationist, but it is of no use being a strong co-operationist unless you are able to do the work.

276. Every man can only do his best? Yes, that is all.

277. We cannot all do as much physical work as men like you and some others apparently can? I admit that, but there were plenty of men there who could do it but would not do it.

278. Supposing, for example, that you had a Settlement of 200 men, and they were all doing their best, and all working on the co-operative plan, do you think it would be possible to achieve success provided that they had a strong faith in the principle of co-operation, and were also willing to submit to discipline in order to make it a success? I think it would, provided that all the men were treated alike—that there was no favour shown to one man more than to another.

279. Then some of the dissatisfaction to which you have referred arose from what you believe to have been undue consideration given to some over others? That is the very thing—favour shown.

280. Was there no method by which you could stop that? I did not see any method, because there seemed to me to be a certain ring of people, and it was no use reporting or doing anything else.

281. Where were the Board of Control all this time? I do not like to mention any names, but I put Mr. Backhouse down chiefly as the cause of the failure of the settlement.

282. Why? In the first instance he kept a man continually there who was unfit for the position he occupied.

283. Who was that? Mr. Waite.

284. You say that Mr. Backhouse's keeping him there led to a good deal of dissatisfaction? It led to dissension amongst 80 per cent. of the settlers.

285. Did the members of the Board very often go there? One or two came now and again—I suppose once a month or once in two months. W. M'Guire.
286. Was there not systematic and regular supervision of the Settlement by the Board? No; only the superintendent. 28 Oct., 1896.
287. The Board went there only at fitful intervals? That was all.

Thomas Thornton called in, sworn and examined:—

288. *Chairman.*] You were a settler on the Pitt Town Settlement? Yes. T. Thornton.
289. From the beginning? No, not from the beginning. 28 Oct., 1896.
290. Will you tell the Committee what you think was the cause of the breakdown of the settlement? I consider that the cause was the bad management, most of all.
291. Do you think that the bad soil had anything to do with it? Well, it was not what you would call first-class soil. But I consider that if it had been properly worked the produce might have been better.
292. Have you ever been a farmer or a selector? Not in this country, but I was a farmer in the old country. Since I came to this country I have kept a dairy and a wood yard, and that sort of thing.
293. In your opinion what was the character of the men who were there? There were some who belonged to a poor class of men.
294. What percentage of good men would you say were there? About two-thirds of them.
295. When you say the management was bad, in what direction do you mean;—were the managers incompetent? I consider that the managers were not competent for the work.
296. Did they know anything about agriculture? No; they did not.
297. Had they any knowledge of dealing with bodies of men in any capacity at all? I do not think so. The men in power there had no more idea of setting men to work than those who had never seen men work, and who knew nothing at all about agriculture.
298. Could you have made a living on the ground if you had been allowed? Yes.
299. How long have you left? A year ago last September.
300. Did you leave because of the department giving you notice? Yes. We were told that we could not get any more rations, and we would have to go somewhere else.
301. You have not been to Ganmain, have you? Yes; I went to Ganmain with the forest thinners.
302. You think you could have made a living at the Pitt Town Settlement if you had been allowed to stop there? Yes.
303. I suppose you received a letter, in common with the other settlers, leading you to believe that those who stayed on would be allowed to remain after the Government aid had been withdrawn? I did not receive such a letter.
304. What is your opinion now of the principle of co-operation;—have you lost any faith in it at all? Not at all. I think that co-operation, if the men there had stuck to their work and had done it properly, would have been a success. As regards a lot of the ground I think it was very good ground, and could grow a lot of stuff. We could have made a tremendous lot of money with pumpkins, melons, and other things which grew well. We had sorghum 15 feet high—a splendid crop.
305. *Mr. Kelly.*] You might have sold it if things had been managed properly, or have utilised it? If things had been managed properly it would have fetched a lot of money. Before I left, the cattle were starving through the forage being wasted.
306. Who was the manager when you went there? Mr. Waite.
307. *Mr. O'Sullivan.*] Where did you sell your produce? There was never much sold. I think that some wood was sent to Sydney. Several lots of wood were sold in Windsor, and we had tons of pumpkins, but the men at the head pulled them before they were ripe and put them in a barn, and they went rotten.
308. That was from want of knowledge of how to deal with pumpkins? Yes.
309. Had not your superintendent any knowledge by means of which he could direct you in these matters? No; he did not know a pumpkin from a melon.
310. I cannot understand how it is that you allowed all these troubles to go on without their being corrected? The first potatoes that were put in I spoke about it, but you were not allowed to speak; you had nothing to do with it, and when they found that I knew a great deal about agriculture, and that I was interfering with the men who were at the head, and telling them how things should be done, I was put in the stables to look after the horses—off the ground altogether.
311. Then I am to understand that because you were interfering in matters that required correction, you were removed to some position where your advice would not be of very great service? Yes; I had nothing to do with it then, and had to look after the horses. Whilst I was in the stables Mr. Tresseder came, and he certainly understood his work, both as regards agriculture and horticulture, and if it had not been for drink I suppose he would have been a better manager than he was.

William Musto recalled, and further examined:—

312. *Chairman.*] You desire to put in some papers? Yes, as follows:—
- Sir, Department of Lands, Sydney, Board-room, 9 June, 1896. W. Musto.
- I have the honor to inform you that at a meeting of the Board of Control, held on the 8th instant, you were disenrolled as a member of the Labour Settlement at Pitt Town, in consequence of the receipt of written notice from the Minister for Lands, to the effect that the Board of Control is to be dissolved, and that the Labour Settlement Area is to be converted into a casual labour farm. 28 Oct., 1896.
- In view of these circumstances I am directed to request that you will vacate the settlement forthwith.
- I have, &c.,  
HENRY C. TAYLOR,  
Honorary Secretary.
- Mr. W. Musto, Pitt Town.

- Sir, Department of Lands, Sydney, Board of Control, 13 June, 1896.
- I have to inform you that the Board of Control has decided to dispose of the small amount to their credit, by granting a bonus equal to one and a half week's allowance at the authorised rate, to such of the men as were disenrolled consequent upon the intention to close the settlement.
- The amount that you will be allowed will be paid on application to me, upon it being shown that you have vacated the Settlement.
- I have, &c.,  
HENRY C. TAYLOR,  
Honorary Secretary.
- Mr. W. Musto, Pitt Town. The

W. Musto. The money they had in hand was money we had earned in the usual way on the settlement. We had some six months or more previously told the Government that we wanted no further assistance. We were only receiving what we actually earned by the sale of wood and other things which we grew on the Settlement. Three weeks prior to receiving that paper they had given us no money whatever. Some people in the train told me that the officials had distinctly told them that they were going to starve us out. They kept the money back three weeks, and then coolly told us, on our vacating the settlement, that only on those terms would they give us a small amount, which in my case amounted to 18s. 9d. a week and a half's rations, at 12s. 6d. a week at that time. Some time ago the matter was brought up in the Assembly. The Board tendered their resignation, with a recommendation that the whole of the plant and stock should be sold. As soon as members of the Settlement saw that they called a meeting of the settlers and deputed three of the settlers to go to Sydney. I was one of the number, and we interviewed Mr. M'Gowen, and he brought the matter before the Assembly; but prior to his bringing it before the Assembly, Mr. Taylor, who is Secretary of Village Settlements, was sent for by Mr. M'Gowen in the lobby. We had represented that we could put out so much wood per week, and its conveyance would result in so much revenue to the railway, and, so that there should be no further expense, we suggested that all that would be necessary would be to give the district ranger the power of supervision. Mr. Taylor, when we represented that we could cut so much wood, said, "But you know, Mr. M'Gowen, that these men are not supposed to cut firewood for a living." After the matter had been brought before the House, the Premier promised that something should be done, but this was all we could ever get as to the terms upon which we could go on:—

Sir,

Department of Lands, Sydney, 20 November, 1896.

Referring to your letter of the 14th instant, respecting matters connected with the Pitt Town Labour Settlement, I am directed by the Secretary for Lands to inform you that arrangements have already been made whereby it is hoped that the members of the Settlement may be enabled to make a living off the land.

I have, &c.,

WM. HOUSTON,

Under Secretary,  
(Per W. M.)

S. Burdekin, Esq., 197, Macquarie-street, Sydney.

Mr. McGowen brought the matter before the House. You will see from that letter that some arrangements had been made, but although we were mostly interested, we never knew, even up to this day, what arrangements we were to work under. However, on the promise of the Premier, we went back and put so many men on the land—so many with horses, and so many men at wood-cutting. We put in crops, and afterwards they were going on favourably. We had a splendid season. Mr. Taylor came when everything was going on swimmingly, and in the presence of the settlers said, "Mr. Waite, these men must do nothing else but cut firewood for a living." Mark the change of front. He told Mr. McGowen in the lobby that we were not supposed to cut firewood for a living, but when he found that we were making fair progress on the farm and in cutting wood on the Settlement, he locked up the garden-tools and said that we must not do anything else but cut firewood for a living. That virtually shut down the place, for the men lost all heart. Finally, all the tools were sold. I also wish to hand in this letter:—

Sir,

Department of Labour and Industry, Sydney, 11 August, 1896.

I am directed by the Minister for Labour and Industry to give you formal notice to quit the premises now occupied by you, your wife, or family on the Crown lands, parish of Pitt Town, recently dedicated as a casual labour farm, and deliver up possession of the same on or before Saturday, the 22nd instant.

I have, &c.,

T. B. CLEGG,

Clerk-in-Charge.

Mr. Wm. Musto, Pitt Town Casual Labour Farm.

THURSDAY, 29 OCTOBER, 1896.

Present:—

MR. WATSON,

MR. O'SULLIVAN.

W. M. HUGHES, Esq., IN THE CHAIR.

William Reginald Stanley further examined:—

W. R. Stanley.  
29 Oct., 1896.

313. *Mr. Watson.*] You have an abstract of expenditure at the Pitt Town Settlement for the first five or six months by the Board of Control? For the first six months.

314. Can you give the Committee the total amounts spent under the different heads? Yes; under the heading of plant the expenditure amounted to £582 3s. 3d. Under that of maintenance, £1,036 7s. 7d.; under the heading of improvements, £118 7s. 2d.; and under the heading of working expenses, £303 17s. 2d.

315. That makes a total in the six months of how much? £2,040 15s. 2d.

316. And the amount due from the department under the Act for the Settlement was how much? £2,330, I think.

317. Practically, that £2,330 was the capital which the Board had to work upon? Yes; except the revenue which was derived from the sale of wood.

318. Can you give the Board any idea of the amount that was allowed per settler each week to be spent in rations? The amount varied at different times.

319. What was the scale for the first six months of the Settlement? The average allowance was 4s. for each adult male, 2s. for each adult female; for one child over six years, 2s.; for more than one child over six years, 1s. 9d. each; for one child over 12 months and under six years, 1s. 6d.; for more than one child over 12 months but under six years, 1s. 4d. each; and for each child over 6 months and under 12 months, 1s.

320. Was any proposal made by the Board to the Minister in regard to getting sufficient money to carry out a scheme of irrigation? I think not; there was a scheme of irrigation submitted by the Board to the Minister.

321. Can you tell the Committee under what circumstances the site was selected? Yes; I believe it was on the report of Mr. F. Turner, F.L.S.

322. Was the site selected by the Minister on the recommendation of Mr. Turner? Yes; he was an expert.

323. Was it not afterwards found that the land was not suitable for the purposes of a Settlement, as far as the quality of the soil was concerned? It was stated that the land was unsuitable.

324. I believe that the settlers towards the close of the period of the Settlement were advised that even if the settlement broke up as a co-operative one, or on its then basis, they would still be given an opportunity of continuing there on some other basis? Yes.

325. They were given to understand that they would be allowed to continue under some form of occupation? Yes; they were so informed by letter.

326. Has any application been received to your knowledge from any of the settlers to be allowed to continue in occupation since the date of that letter of Mr. Wilson's? I could not say.

327. Could you give the Committee any idea of the amount of time put in by the settlers in conserving water? Many of them must have been at work for months; in fact, up to the last minute almost, the question of the construction of dams and the conservation of water generally was receiving attention.

328. It was a necessity, because of the lack of permanent water on the ground? Yes.

329. And would take up a considerable proportion of labour which might otherwise have been expended in reproductive effort? Yes.

330. Of course, to that extent, the site would be unsuitable for the purpose of getting an immediate return? I should think so.

331. Can you give any idea of the amount of land cleared;—they have the valuation, have they not? Yes.

332. Can you give the valuations at the different periods;—several valuations were made—one was made when the Settlement was in full swing, others later on, and again towards the finish? The latest valuation under the original Board was made in February, 1895, and the value of all the improvements, stock, plant, and horses was then stated to be £5,991 14s.

333. Among the items there are 120 residential and other huts, valued at £960? Yes; that would be at the rate of £8 each.

334. Then I find these items:—Superintendent's cottage, £40; buildings, £271; sixteen dams, with 7,000 yards of excavation, £350; fencing to the value of £929; cultivation of land, £1,155; for the clearing of land not cultivated, £960;—I presume that that would be a fair valuation, the value not being unduly raised or diminished? The valuation was made by the conditional purchase inspector for the district, and he would value these works for the Board in the same way as he would value any other departmental work.

335. *Chairman.*] These trees, fencing, and clearing come to about £3,000, and the whole of that has been entirely thrown away, and cattle have been allowed to break through the fences and destroy the whole thing;—was that done by order of the Board? Certainly not, so far as I am aware.

336. It is an undoubted fact that the cattle got in and destroyed thousands of trees? It could not have been done with the authority of the department so far as I am aware.

337. What did the department intend to do with this cleared and fenced land which was cultivated? I cannot say.

338. After spending £3,000 in clearing, fencing, and cultivating this land, did they calmly propose to let it go to waste again;—did they propose to do anything at all? Not to my knowledge.

339. There were acres of land that cost thousands of pounds to get ready for cultivation;—surely they could not propose that that should become common land again? I cannot say, but I think not.

340. You have no power in regard to the Settlement—you were unable to direct anything to be done? I merely held a subordinate position.

341. Was Mr. Taylor an executive officer? Yes; he was the honorary secretary to the Board of Control.

342. *Mr. Watson.*] He was the advising officer to the Minister during a considerable part of the existence of the Settlement, and he was the only officer to whom the Minister looked for advice in connection with it? For reports and information as to the progress of affairs.

343. In this sum of £6,000, set down as the value of improvements, I believe there is nothing included for the value of growing crops;—Mr. Brown, the inspector, says that he cannot attempt to estimate the values of them? Yes.

344. I believe that the inspector in making his report states that he does not include any estimate of the value of the growing crops? It appears so from the report.

345. At the time that this valuation was made of £6,000, there had been expended a sum of £6,700, of which sum £6,200 had been advanced by the Crown? Yes; that, I think, is correct.

346. So that if these figures are correct the Crown had an asset of £6,000 to represent an expenditure of £6,200? Yes.

347. Have you the valuation of the improvements on the settlement as on the 26th October, 1894? Yes; and also a valuation made on the 20th August, 1894.

348. That would be a year after the starting of the Settlement? About thirteen months after.

349. According to that statement what was the total value of the improvements? £4,353.

350. Can you give any idea of how much at that time had been expended by the Crown on the settlement? £4,470 had been expended. On the 23rd August the sum of £4,080 had been granted.

351. Can you say, from the bank-book, how much of that had been paid away? At that time there was a balance in hand of £713, but there were outstanding liabilities, which would go far to absorb it.

352. You had, practically, spent the amount which had been granted? The Board had.

353. And they had against the amount granted to them an estimated value of £4,353? Yes; as stated in the valuation.

354. The inspector made some comments as to the improvements in his report to the Minister? Yes; he says: "There were improvements, working plant, and live stock upon the land, which I value at £4,353, as detailed herewith. This is exclusive of a large amount of small tools and stock in store, a detailed list of which I was informed would be forwarded to the department."

355. Again, as in his report previously, he takes no account of the growing crops? No.

356. Do you produce a copy of the regulations of the Board of Control governing the Settlement? I do. This is a copy of the regulation, with all amendments, as approved by the Governor and Executive Council.

W. R.  
Stanley.  
29 Oct., 1896.

TUESDAY, 3 NOVEMBER, 1896.

Present:—

MR. O'SULLIVAN, | Mr. WATSON,  
MR. KELLY.

W. M. HUGHES, ESQ., IN THE CHAIR.

The Hon. Benjamin Backhouse (a Member of the Legislative Council), sworn and examined:—

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357. *Chairman.*] Do you wish to make a statement? I should like to give a short statement, a *résumé* of the proceedings of the Board from its inception until it sent in its final resignation. I would just premise that in 1892 there was a very large amount of poverty existing, and a committee was formed with the view of endeavouring to obtain from the Government such assistance and such concessions in the way of land as would enable a number of the people to be put on village settlements in the country wherever it might seem most desirable. Just at this juncture the Rev. Dr. Tucker from Melbourne came here, and illustrated what they were doing in Victoria. This gave a considerable impetus to the movement, and the Committee, of which I was a member, got up what turned out to be a very large meeting in the Town Hall, at which Sir Frederick Darley presided, and there were seventy or eighty influential men on the platform, and I suppose 5,000 people in the body of the Hall. That was on the 22nd May, 1893. At that meeting a village committee was appointed, principally to induce the Government to frame an Act and get it passed by Parliament, in order to achieve the purposes at which we aimed. Several Bills were drafted by the Committee, and submitted to the Minister for Lands, and ultimately, as you are aware, an Act was passed which was not absolutely in accord with the suggestions of the Committee, but which was sufficiently nearly so to induce them at once resolutely to set to work under it. Dr. Roseby drafted, and the Committee eventually published, this epitome of the Labour Settlements Act, with suggestions for establishing and working the settlements. The summary of this epitome is as follows:—

## CO-OPERATIVE LABOUR SETTLEMENTS.

EPITOME of the "Labour Settlements Act," with suggestions for establishing and working the Settlements, put forth by the Committee appointed at the public meeting, held in the Town Hall, Sydney, 22nd May, 1893.

The following are the names of the above-mentioned Committee:—

Rev. J. Bennett Anderson; George Ashcroft, C.E.; Benjamin Backhouse, H.A., R.I.B.A.; Octavius C. Beale; P. J. Brennan; Hon. J. M. Creed, M.R.C.S., M.L.C.; Alfred DeLissa; Henry Egan; F. Flowers; F. B. Gipps, C.E.; Rev. E. Harris, D.D.; John Hefner; W. A. Holman; E. J. H. Knapp; Rev. J. D. Langley; H. H. Lusk; Percy R. Meggy; R. McKillop; Henry W. Parkinson; Rev. Thomas Roseby, LL.D.; H. H. Simmonds; Thomas Symons; Arthur Vernon; Rev. G. T. Walters; J. Chris. Watson (President, Trades and Labour Council); James Watson; J. V. Wiley; W. Wooldridge.

*Adopted Monday, 19th June, 1893.*

IN view of the fact that several letters have appeared in the Press, making inquiry concerning the character and scope of the Labour Settlements scheme, and especially in view of the fact that these inquiries are being constantly made by persons applying to the Committee to join the proposed settlements, the General Committee, elected at the public meeting in the Town Hall, on 22nd May, 1893, has deemed it advisable to publish the following, partly by way of explaining the meaning and scope of the Labour Settlements Act, as understood by the Committee itself, and partly by way of offering suggestions which they have had under consideration towards making the scheme a success. The purpose of this paper is to set forth partly what *may* be done, and partly what it seems to the Committee had *best* be done, under the provisions of the Act.

1. The main, though not exclusive, object of the scheme, as formulated in the Act, is to provide the means of living for the present large number of persons out of employment, and, for the most part, without means, by settling them (in sufficient numbers in each case to form a Village or Industrial Settlement) on suitable blocks of land, under the direction and management of a "Board of Control" appointed by the Government, and consisting of not more than sixteen nor less than eight persons, of whom one-fourth may be females.

2. The Board of Control, having charge of one or more distinct Settlements, will be a corporate body, with perpetual succession, so that it may carry on continuously the work of placing groups of settlers on Crown lands. For this purpose the Government will grant leases to these Boards for any term not exceeding twenty-eight years, and renewable for a like term. The Act makes no provision for purchase, and it will not be possible, in any case whatever, to purchase these lands. The tenure will be exclusively leasehold. No rent will be payable for the first four years, but at the expiration of that time, along with the rent charge, the Government advance will also become repayable, at the rate of 8 per cent per annum, covering both principal and interest.

3. The duties of the Board of Control will be to enrol such settlers as it may think fit at its absolute discretion, or as provided by regulations, and in such numbers (for each settlement) as the Minister may approve, which settlers must be, whether men or women, of full age if unmarried, or heads of families. The amount of the advance granted to the Board by the Government will be calculated on the basis of £15 in the case of unmarried settlers, £20 in the case of married settlers without children, and £25 in the case of a settler the head of a family with *dependent* children. But although the advance is calculated on this basis, it is not intended that these sums of money should be given to the settlers. The total loan-grant will be held and used by the Board for the benefit of a Settlement as a whole. The various industries under the Board's control will all be co-operative. The Government advance will be used for the purpose of purchasing tents, tools and seed, for setting up a Dairy Farm, and for maintaining the settlers until there has been some substantial return for their field labour, which can hardly be the case for several months.

4. It will be evident that a Settlement, even as thus aided by the Government advance, will be unable to maintain itself until this return from field labour comes in, without substantial aid from public subscriptions. Let it be considered, however, that the position of a large number of these settlers would, under ordinary circumstances, be a severe and constant drain on public charity while the present industrial depression continues. We cannot see men, women, or children starve; and if the bread-winner is unable to find employment, his family can only be supported by public or private charity. And how much better it is for us to help people to help themselves than to feed them on the bread of idleness.

5. The Government advance, *with public subscriptions added*, will barely cover the cost of the preliminary outlay above mentioned, with perhaps the maintenance of the settlers for half a year; the settlers will, therefore, have to occupy themselves at first in doing such work as promises a speedy return. The Dairy and Agricultural farm will come into early prominence. Firewood selling and charcoal burning, Poultry-raising and Bee Culture will also help the Settlement to add something to its scanty resources. But it will be a great help if the Settlement is sufficiently near some already established centre of population, to enable the settlers to get work outside. The Board will probably prescribe a certain number of hours work per week—probably 48 hours—to be done, as in the service of the Board itself, for the benefit of the Settlement as a whole. All "outside" work will be under the control and regulation of the Board; as much so as that done within the Settlement itself, and it will only be undertaken as part of the co-operative work of the Settlement. But the Board should carefully guard itself in the acceptance of this "outside" labour against competing injuriously, at a lower wage, with workmen unconnected with the Settlement.

6. Beyond the number of hours work fixed for each member by Regulation, a member's time will be his own.

7. There is a provision in the Act under which the Board may sublet portions of its leasehold land to settlers on prescribed conditions. The settler may thus have a home of his own, and something on which to bestow his leisure time and labour. And there is a further express provision in the Act conserving his interests in this regard, even if the Settlement itself should be disbanded.

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8. The Board will have full power to disenrol settlers and to admit new settlers from time to time. It may establish industries. It may make regulations for the cleanliness, good order, and government of the Settlement, and for apportioning the work to be done by the settlers, fixing their wages, emoluments, or profits on as equal and equitable a scale as possible, having regard *inter alia* to the number of dependent children in each family; and there can be no distribution of profits till the cost of maintenance of all the settlers with their families has been provided. Superintendents will be appointed by the Board, with large discretionary powers, so that unworthy or idle settlers may be expelled, and the good order of the Settlement maintained. The Settlements, there is little doubt will, in all cases, exclude the sale of intoxicating liquors.

9. It seems to the Committee that, wherever possible, it will be well, from considerations of economy, to choose the Superintendent from among the settlers themselves. But it will be a wise economy, failing a suitable man being found among the settlers themselves, for the Board of Control to appoint an agricultural expert, at moderate remuneration, to undertake this duty. It would seem further advisable that one member of each Board of Control should be an experienced farmer. And the case seems also one in which the Government, out of their own scientific staff, might make provision for such instruction to be given in agriculture, irrigation, &c., as may be of material assistance to these settlements, especially at the start.

10. The Committee understand that it is the purpose of the Minister to give the settlers in all cases direct representation on the Board of Control. These *resident* members of the Board—for such they will doubtless be—will probably act a kind of Works Committee, and as the local representative of the Board on the settlement itself.

11. A knowledge of human nature easily suggests the difficulties incident to co-operative Settlements of this order. In spite of the vigilance of the Board of Control, undesirable persons will doubtless find entrance; and where people are associated together as strangers, there will be bound to be instances of jealousy, discontent, or disaffection; and where any money is to be distributed it will be hard to keep off the indolent and dissolute. But the Board have full power, in the last resort, which it is expected it will exercise, to expel drones and mischief-makers. And the settlers themselves will see how entirely it is in their own interest to get rid of those who will not work. The Act very properly provides the swift sharp remedy of cancellation by the Government of mismanaged or hopelessly abortive Settlements.

12. The desire of the Minister for Lands appears to be to grant to the Board which will be nominated for the metropolitan district, leases of land as near as may be to Sydney itself, and to towns near Sydney. 1,000 acres of land might in some places maintain a labour Settlement consisting of from fifty to 100 enrolled members. In other cases the area must be proportionately larger. It is very likely that, as the scheme expands (and the operations of these Boards are intended to be continuous and perpetual) some large areas of land along the courses of rivers, and now in private hands, will be resumed to be dedicated to industrial settlement.

13. The provision in the Act concerning the establishment of suitable industries may hereafter lead to co-operative mining.

14. All settlers shall, on their enrolment, pledge themselves to abide by the principles on which each Settlement is founded, and by the regulations made under the Act, whether by the Government or by the Board of Control, and to live an industrious, peaceable, and sober life, and to do their best to enhance the general welfare.

15. It will be well for the Settlements at first to confine themselves to simple industries, leaving more elaborate ones requiring machinery until sufficient funds have been accumulated to use them with success. But they should avail themselves to the utmost of all methods which science and experience suggest in carrying on industries. Farming should not be slovenly, but, as far as may be, intensive, and conducted on scientific principles. It should not allow its operations to be scattered over any impracticable area. Regard should be had from the start to do all that is possible to make the Settlement bright and attractive. Ample opportunities should be offered, under proper regulations, for social intercourse, amusement, and recreation. No permanent residence will be permitted on the Settlement, except, of course, that of settlers and their families, with any such instructors, inspectors, or superintendent as may be appointed by the Government or Board of Control, and expressly permitted under the terms of their appointment to reside there.

16. In the selection of superintendent or foremen of works it will be well for the Board of Control to proceed with extreme caution. The success or failure of the scheme will largely depend on the character and experience of the resident superintendent, and it would be well to make the appointment purely temporary until the suitability of the person selected is established.

17. Though the Act is mainly intended to serve as an outlet for unemployed persons without means, there is nothing in it to prevent persons with small means from forming a co-operative Settlement under some of its provisions, accepting, *e.g.*, the provision of freedom from rent for four years, even if they decline the Government loan. In that case the Board would naturally relax the stringency of its control, and leave the settlers largely at liberty to manage the affairs of their own Association. The Board of Control is fully empowered to concede that liberty.

18. The essential features of the Scheme may be briefly summarised:

- (1) It is essentially a leasehold system. It is not intended to let the land pass into private ownership.
- (2) It is essentially co-operative. So many hours work per week must be done by each enrolled settler for the Settlement itself. And the aggregate profits are only divisible after all persons in each settlement have received a fair allowance for maintenance.
- (3) The Settlement will be largely dominated by the idea of equality. As near an approach to this will be arrived at as is equitable and possible.
- (4) The Settlement, as at Mildura, will have no alcoholic liquor sold within its borders.
- (5) The settlers, for purposes of order, economy, and successful organisation, will be trained to habits of obedience to industrial and civil authority; they will lose none indeed of their privileges of Australian citizenship; but they will have voluntarily submitted themselves to industrial direction, and will have to take their assigned places and do their assigned work, in exactly the same way as in any industry carried on by private ownership. But the great difference will be that all the proceeds of the labour of the settlers will belong to themselves alone.

NOTE.—The above scheme, it may be noticed, deals with a certain definite type of village settlement, *viz.*, that which may be described as *fully co-operative or communal*. There is no doubt that these industrial settlements will generally conform to that type. But it is to be observed that the Minister for Lands favours the establishment also, under the provisions of the Act, of *partially co-operative settlements*, on the joint stock principle; the Act distinctly provides, however, that *in all cases* the actual maintenance of the whole body of settlers, with their families, is to be a first charge on the Settlement as a whole.

It may later be found expedient, as suggested by the Minister for Lands, to establish a Labour Settlement in the neighbourhood of Sydney as a temporary training settlement, continually receiving new settlers from the ranks of the unemployed, from which those who have acquired sufficient knowledge and experience may be continually passed on to *permanent* associated Settlements on larger areas in the Colony, but the Committee is of opinion that it would be desirable to give full trial, in the first place, to the system of permanent settlement.

JAMES WATSON, Hon. Secretary,  
Committee Rooms,  
Town Hall, Sydney.

BENJAMIN BACKHOUSE, } Joint Honorary  
J. CHRIS. WATSON, }  
OCTAVIUS C. BEALE, } Treasurers.

Every man that applied to join the proposed Settlement (and there were some 500 or 600), was furnished with one of these epitomes, so that he could read it and determine whether he would work under the Act, and under regulations of this kind. I have underlined in red some of the parts of the document, which, I think, should be most carefully considered. A Board of Control was appointed by the Government who selected five members of the Village Committee, *viz.*, Messrs. Benjamin Backhouse, H. H. Lusk, Rev. Dr. Roseby, Rev. G. T. Walters, and J. C. Watson, and appointed five other gentlemen, *viz.*, the Very Rev. Dean Slattery, Messrs. R. Nott, S. Sullivan, H. R. Jones, and J. Creer quite outside us with whom we had had no previous communications, and of whom we had no knowledge, except that we knew them as citizens. They were not gentlemen who were originally identified with the movement. I will also mention that the Village Committee had received, on a printed form from each applicant, something like 700 applications from heads of families and others desirous of being included in any village scheme that might

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might be formed. As soon as the Board was appointed we found by the Act (some thought unfortunately) that all applicants had to send in their applications through the Labour Bureau. I believe that we lost a good many excellent would-be village settlers on that account. The Act provided for that procedure, and the Minister insisted on its being carried out. To show how carefully we went to work, I may mention that on the 15th July this advertisement was inserted in the newspapers:—

#### LABOUR SETTLEMENTS.

A MEETING under the Board of Control will be held in No. 7 Room, at the Temperance Hall, on Wednesday next, July 19th, for the purpose of seeing personally all applicants for enrolment, commencing at 2 p.m., in the following manner:—

The names of applicants from A to C, from 2 to 3 p.m.; D to F, from 3 to 4 p.m.; G to K, from 4 to 5 p.m.; L to O, from 5 to 6 p.m.; P to T, from 6 to 7 p.m.; U to Z, from 7 to 8 p.m.

That was very tedious and laborious work. The Board divided themselves into small committees, and sat there until a late hour at night, to get through the work. Every applicant was seen; everyone was asked whether the "Epitome" placed in his hands was in accordance with his wishes, and every one whose application was entertained assented to it. There were one or two who had a little money, but we were requested to deal first with the absolutely poor people, and generally those with large families were to have the preference. The consequence was that we selected the full number, viz., 100, the settlement was to accommodate. Speaking from memory, there were about ninety heads of families, with their wives and children, and ten single men. The latter happened to be remarkably good men, and I mention this because they figure in the history of the Settlement later on. To prevent confusion, the people were gradually sent up to the Settlement, commencing on the 29th July, 1893, when three pioneers were sent up; and from day to day, subsequently, 100 settlers were gradually, in small batches, to prevent confusion, brought on to the ground.

The 23rd September, 1893, was a red-letter day at the settlement. On that day the Settlement was officially inaugurated. I will go back a little. During the interim (appointment of Board and present date) I, with two or three others, had been deputed by the Board to visit the settlement with the Government Surveyor, for the purpose of examining the land and fixing a site for the village. I ought to have said that we had no voice in the selection of the land. That was handed over to us. We were told, in effect, "There is land for your Pitt Town Settlement on the Pitt Town Common—2,100 acres; it has all been properly surveyed, and is ready now for you to occupy it." We took a great deal of trouble in selecting a site for the village, and looking over 2,000 acres of land was not a very light task. I have not the original plan with me. I cannot find one half of the plans that were prepared, but I found several, which I have placed on the walls now before you for the Committee's use. We selected a site which the surveyor pointed out as, in his opinion, the best on the settlement area. It was situated in a sort of amphitheatre of gently declining hills, opening in a horseshoe form on the Dural Road. The horseshoe form was first laid out sufficiently large in order to have 100 allotments on its margin, the low land in centre of the "horseshoe" to be ultimately recreation ground and for public use, each settler to have an allotment for himself, to provide a cottage, and to grow a few vegetables on his own account; not to be too large in area, but such as each settler could work and keep in good order in his spare time. By this arrangement the settlers' allotments were in view of each other; not as in a rectangular plan, where they would be back to back and front to front, but each "holding" in view of the rest, so as to promote a neighbourly feeling amongst them. When we came to lay it out, we found the ground such that to keep the allotments on about the same level (see plan) we had to run up the depressions of ground, in order to place the houses on an equality, so that some should not be low down, some inferior and some superior. We wanted to get a feeling of equality with regard to the allotments, so that there should not be any grumbling afterwards. Then I prepared various plans (before you) for log, slab, brick, or stone cottages, and for the commencement, the back and inferior rooms were put up, all being put sufficiently far back so that the finished building would not encroach on a building line laid down. This laying-out was all done by one of the settlers—a surveyor. He had to peg out every allotment, to number every allotment, to place a line where the cottages were to approach the main road. Every detail of sanitary arrangement was gone into; nothing offensive was allowed to run into the ground below, and everything was carefully and fully provided for.

Then the time came for allotting. We succeeded in this, and had a sort of gala day, as before stated, on the 23rd September, 1893—the inauguration of the Settlement. The settlers balloted for the allotments which they were to occupy. The Minister for Lands attended and helped us by his presence. Mr. Copeland was very much surprised even then with the amount of work done, but it was about the only time that we got any warm encouragement from the Minister. Called upon, as Chairman of the Board, to open the proceedings, I select this paragraph from what I said on that occasion:—

"Incidentally I may point out that it is not the intention that this Settlement should enter into competition with the hard-struggling farmers, wood-cutters, &c., around it, at least only in a very modified form, and that only until it becomes self-supporting. The intention is to form a state or colony to produce all that is required for the settlers' own use, so that they may enjoy what they produce without its being appropriated by others."

Mr. Copeland said:—

It was with very great pleasure that he had visited the Settlement that day. He did not expect to find the place so far advanced, but he would now go back with much stronger hopes of this very interesting experiment turning out successfully than he should have had had he not come there. \* \* \* The eyes of the world were on this Settlement, watching to see how the experiment would turn out, and he had no doubt if it was a success there would be many other similar Settlements in different parts of the country. They were well situated near the railway, and had a market in the vicinity. The soil was good, and now the success of the whole thing was entirely in their own hands.

I should like to say, parenthetically here, that sixteen months afterwards Mr. Carruthers went up to the Settlement, and declared that the soil was absolutely unsuitable. Thus we had two very different statements—one at the beginning, and the other at the tail-end of our undertaking. So much interest was taken in the undertaking that the *Daily Telegraph* published a plan of the Settlement. We knew from the first that the amount of money that would be available under the Act would not be sufficient; therefore, following up the very enthusiastic meeting which we had at the Town Hall on the initiation of the movement, we convened another meeting in the same hall (and several thereafter in other places), but, unfortunately, the public did not respond as they did on the first occasion. Instead of there being 5,000 or 6,000 people present, there were only 300 or 400. This was a great damper. I mention this to show

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show that it was necessary to go to the Minister for Lands, which we did on the 13th January, 1894, by a deputation, to ask that the authority of Parliament might be obtained for a further grant for the settlement. During the interview Mr. Copeland said that "the scheme was not his scheme." I mention this to show the want of sympathy. He seemed to say, "This scheme is not my scheme; my scheme was different," and probably would have been successful, but this scheme I have my doubts about. That was the inference.

Then the water difficulty faced us, and although we had dams formed, dry weather set in, and there was a great deal of trouble in reference to water, though the settlers were never absolutely without water. The dams were increased, and there is one there now which forms a beautiful lake. A large quantity of water was stored on the ground, which before that was absolutely waterless. When we found this difficulty, we went to the Minister, and asked him to extend our land to Cattai Creek, by granting 300 or 400 acres from the Settlement on to the creek in order to get to the water. We proposed to give him some land nearer the railway in exchange for some of the land on Cattai Creek. The Minister said he would consider the matter, but eventually we were told that it could not be granted—the land was too valuable, and had to be sold.

I daresay you have been told that there were valuations of the work from time to time, and that the value of the work done, &c., was equal to, if not in actual excess of the cost, even under the difficulties under which beset us. To meet a difficulty in the ration allowance, the token system was introduced, and a man who was entitled to 4s. or 5s. worth of rations was given tokens for such amount, with which he could purchase a little butter, medical comforts, jam, or any other article which he might prefer. It was no addition to what they were allowed, but if they could do with less (meat, for instance, which the Board encouraged), they could use their tokens for the purchase of any little luxury of that kind.

About, or after, August, 1894, the settlers were addressing the Minister behind the back of the Board, and this led, ultimately, to a great deal of trouble. As you may imagine, these men were expecting that the Minister, through some political influence outside, would be induced to intervene, and circumvent the Board itself, and that they would be able to establish themselves to some extent independent of the Board. When we found this out we at once mentioned this to the Under Secretary for Lands, and pointed out that any communication from the settlers we thought should have been handed to the Board, and the settlers should have been written to by return post, and told that they had no right to communicate with the Minister, and that their letters had been handed to the Board. That would have enabled us to control matters in a way that was necessary for efficient government. I again and again told the settlers, as in the early stages of the Settlement, when everything went on pleasantly, "If you continue to stick together, and to work together, as brethren, I believe that, notwithstanding the ground is not what it ought to be, success is certain," and I still think it would have been so. But I also constantly said that unless they intended to do that they had better pick up their traps and leave the Settlement.

Regular and periodical visits and instruction by experts from the Agricultural College were a great want. I may mention, also, of which perhaps you are aware, that the press generally were against us from the commencement, and a portion of the press was absolutely hostile. I mention this because I think it operated in a way to injure the Settlement, or to prevent it from attaining that success which it might otherwise have attained.

Then comes another difficulty: we could not get the money paid to us to enable us to pay our debts. We went into debt to the amount of £400 or £500 from time to time, expecting long before we got so far as that that we should have received an instalment. What several members of the Board felt, especially those in favour of having a sawmill, was that all the money should have been placed at our disposal from the first. If it had been, many matters could have been managed very much better than they were owing to the money being doled out in this way. We had to threaten to resign on several occasions before we could get money passed to our credit. Notwithstanding all this, we pushed on and did our best.

The erection of a large hall for general purposes was suggested. I at once prepared plans for a hall, which are here on the wall. The hall is 60 feet by 30 feet, and it has advanced so far as to show what a commodious structure it would have been on completion. The walls are 14 inches thick, and are now about 6 feet high. The Rev. Mr. Ayling, who was very good to the settlers, got up a subscription to enable the settlers to get things which they could not make themselves. They made the bricks and most of the other things necessary, because we had among the settlers all kinds of tradesmen. The hall stands on an eminence, and is seen from any part of the village.

358. *Mr. Watson.* That hall was to be arranged for outside the expenditure of the Board? Yes, possibly, but the actual building work was done after the resignation of the Board, but the new Board, I understand, provided the rations whilst the men were doing the work.

359. Were they working during settlement time on the hall? Yes, I think so; they, the settlers, felt the want of a hall to meet in very much, and for amusement, for intellectual and religious purposes. We know that it was really necessary, and had made all provision for it before resigning.

There was a little Catholic church proposed, and a design was prepared and is here, a rustic picture, but it was not carried out.

I should like to go back for a moment to the commencement of the Settlement to say that some of us then thought that poverty would have been a sufficient bond of brotherhood amongst the settlers, but in that we were mistaken. We found first when the men went up there that they were all agreeable, and worked together agreeably, but we had "all sorts and conditions of men." The Board found from experience that the men ought to have been differently selected. If we had had men amongst whom there was some amount of freemasonry, whether it was a religious bond or any other, as long as they were friends, the undertaking might have been a greater success. These men were all clamorous for getting out of the town. We had 600 or 700 heads of families where we could only accommodate 100. When a number of men had fallen almost as low as they could fall, one would think they would have said, "We will make a fresh start," and that their poverty would have bound them together. It was not entirely the men's fault, and I do believe that we should have got over that had we had the sympathy that was expected.

Mr. Carruthers, in January, 1895, visited the Settlement, and he said "he was convinced that a mistake was made in selecting that locality, and that the soil in both places (Wilberforce and Pitt Town Common) was utterly unsuitable. This had at once a most depressing effect on the settlers. Some of the men,

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men, he said, had not been as active as they might, but that the majority had taken an intelligent and unceasing interest in their work." The present Minister for Lands now said that the land was absolutely unsuitable, though the former Minister for Lands said that it was good land. I believe that Mr. Copeland was influenced in saying that by Mr. Turner, the expert, who reported that the land was very suitable. Before we saw it we had that report, and we were delighted at the prospect of making a start on good land.

The Board, of course, framed regulations under the Act, and one that is the key, as it were, to the principle of Settlement, says (clause 22, sec. 3) :—

"The maintenance of the members of the Settlement and their families shall in all cases be a first charge upon all funds in the hands of the Board, and upon the proceeds of the labour of the Settlement."

To show the carefulness of the Board, and that we went to work in a business-like way, we required every settler to sign an agreement before sending him to the Settlement, which is a schedule to these regulations; and each man was supplied with a copy of the regulations.

SCHEDULE REFERRED TO.

I, \_\_\_\_\_, on being enrolled as a member of the Labour Settlement at \_\_\_\_\_, under the Board of Control having charge thereof, do hereby agree and undertake to abide by the principles upon which the said Settlement is established, and to conform in all respects to the rules and regulations made under the Labour Settlements Act, 1893, or any amendments thereof, whether made by the Governor in Council or by the Board of Control; and I pledge myself to live a sober, industrious, and peaceable life, and at all times to do my best to promote the general prosperity and well-being of the Settlement; and I do this upon the understanding that failure on my part to fulfil these conditions or obligations renders me liable to disenolment.

Witness—

(Name)

Date.

I mention these things to show the care that was taken by the Board to ensure success.

As soon as Mr. Carruthers became Minister for Lands Dr. Roseby and I sought the first opportunity to see him, and have a chat regarding the Settlement. This took place on the 14th September, 1894, and we were pleased, as the interview seemed very satisfactory. Afterwards, on the same day, I wrote to the Minister (copy of the letter follows). Before sending it I submitted it to Dr. Roseby for perusal and correction if necessary. I hand in reply. This disappointed us, and among other things, serves to show that our complaint of want of sympathy was justified :—

"A"

Dear Mr. Carruthers,

Hotel Métropole, Sydney, 15 September, 1894.

Referring to our private interview with you yesterday (Dr. Roseby and self, for which as members of the Board of Control of the Pitt Town Co-operative Settlement, we offer you our best thanks), we understand that the following suggestions made by us were assented to by you :—

1. That for reasons stated, the Board shall continue as at present constituted, excepting only that the vacancy caused by Mr. Lusk's retirement be filled by the appointment of Mr. James Watson.

2. That (we having laboured so strenuously for the past two years, and have every hope, if not interrupted, of making our work succeed, and prove that village settlement is practicable) if any alterations are recommended to you, or contemplated by you, they will not be decided upon without our being first consulted, and our reasons for or against invited, and that letters or reports received by you would be sent to us for perusal and comment.

3. The Settlement has 100 enrolled heads of families, and this number originally authorised by Mr. Copeland has been uniformly maintained. At the time of passing the first amending Act, a few men had left the Settlement to try their luck elsewhere, leaving their wives and families for a time on the Settlement. Not succeeding, the men quickly returned. Dr. Roseby and self spoke to Mr. Houston about this, and he at once said that he would support the capitation allowance for the full number. The honorary Secretary will write you on this, as he promised to do.

4. That Dr. Roseby's reply to a minute in reference to the Board having employed a junior at 10 shillings per week was considered satisfactory by you; and that, in this connection, it was mentioned that the newspapers the junior collects and despatches daily to the Settlement are worth quite the amount of his small salary.

It was also incidentally mentioned that the books, &c., kept by Mr. Stanley for the Board are always open to, and are frequently inspected by, the officers appointed by the Government, and that these officials have been warm in their praise as to the correctness of the books, &c., and as to the admirable manner in which everything is so clearly shown. In addition, it was stated that there are men on the Board (I especially refer to Messrs. Nott and Rooke-Jones, the auditors) who are constantly supervising the accounts and making periodical audits, and that our balance-sheets are regularly furnished to the Department, consequently we suggest that the Board should be left untrammelled to deal with the business generally.

Briefly I would refer to a few words spoken as to our experience in the management of the Settlement so far, the noticed effects and proposed remedies, and the principles by which we are guided. As to remedies, we may have to ask your approval of a slight alteration in our own regulations in respect to the creation of the "Committee of Advice."

As to the principles for future operations :—

- a. It appears that a large majority of the settlers that we are dealing with cannot be advantageously allowed for some time to come, but a very small degree of self-government, our management will doubtless in time lead the settlers to self compulsion on the lines of order and regularity, and themselves fitted gradually to take the management of their affairs into their own hands and ultimately to dispense with the services of the Board.
- b. That to help able-bodied men to keep themselves and their families decently by their own industry in such an organisation as we are managing, is for the Colony at the outset, and certainly in the long run a great deal cheaper, and a great deal more humane than to keep them in misery and idleness.
- c. That production in this organisation should be largely for consumption by the settlers and their dependents—each receiving as wages a draft on the store he is helping to fill and replenish—a token system is now in operation to this end, and many of the benefits of full co-operation will be illustrated by it.
- d. That a number of such organisations, ultimately federating, may form the nucleus of a future co-operative commonwealth.
- e. That by perseverance on the lines we are working and by the experience so far gained, we are helping to build anew, under fraternal principles (cramped, however, by the limitations and hardness of the existing and competitive system), on lands away from towns under clean and wholesome conditions, a society that will combine the advantages of town and country, and contribute to the material well-being of the people.

I am, &c.,

BENJAMIN BACKHOUSE.

"B"

Sir,

Department of Lands, Sydney, 21 September, 1894.

With reference to your letter of the 16th instant, on the subject of the suggestions made by yourself and Dr. Roseby in the course of an interview that took place on the previous day, I have the honor, by direction of the Secretary for Lands, to inform you that he certainly declines to accept your letter as a correct version of the interview or of any results arrived at, but that he has considered the suggestions made, and is dealing officially with them one by one, as appears best for the public interest.

I have, &c.,

F. H. WILSON,

Acting Under Secretary

Benjamin Backhouse, Esq., Hotel Métropole, Sydney.

When

## SELECT COMMITTEE OF THE PITT TOWN SETTLEMENT.

When we found that the men were getting demoralised to some extent, through the action of the Minister, mentioned before, in permitting complaints to be made to him behind the Board, and knowing also that we had been disappointed with regard to the land, and many other things, I went with Dr. Roseby to the Minister. Other members were not able to give so much time to it as we were. Mr. Watson was not able to do so. He was in active business, and we were compelled to meet in the afternoon, when he could not attend, without neglecting his avocation, therefore Dr. Roseby and myself took a very active part in the matter; and when this difficulty was apparent to the Board, we went to Mr. Carruthers and suggested there should be a limited number of men retained at the Settlement, men who were strictly in favour of conducting the Settlement on the lines on which it was established. There were twenty-five or thirty families in that position. Mr. Carruthers said, "If you have any suggestions to make, put them in writing." Fortunately, I had written out before what we suggested. It ran as follows:—

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Rough Draft.— Suggestions by Chairman and Hon. Secretary, Board of Control for carrying on the Pitt Town Co-operative Settlement.

Suggested,—

27 January, 1895.

1st. To carry on the settlement on the established lines with as many settlers as are willing and may be approved (probably not much in excess of twenty-five families), and that the ground may be made to support.

2nd. The Government to use any of the vacant huts, as occasion may arise, as temporary accommodation for healthy destitute unemployed it might decide from time to time to send up from Sydney or elsewhere, in preference to granting them rations from the Labour Bureau. The men so sent should work as probationers on the Settlement until they are eligible for being drafted off to other settlements. A satisfactory arrangement (probably that of charging the actual cost of such temporary settlers) could be made with the permanent settlers and for repayment of such labour supplied, and the amount refunded eventually to the Government in like manner to that of the loan of money under the Act. The settlement being close to Sydney, it is suggested that it is well suited as a depôt or training ground to test the *bona-fides*, suitability for association, and capabilities of unemployed workers or applicants for assistance. New Settlements might then be successfully formed from selected workers in batches from time to time from the temporary settlers, by some such arrangement as outlined above. Agitators, idlers, and chronic growlers, &c., could be excluded, the presence of such having retarded the Pitt Town Co-operative Settlement hitherto.

That was the recommendation to the Minister, and Mr. Carruthers said he would give it consideration, and would communicate with us. We waited about a fortnight; and went to him again, when he said that he had not had time to decide what he would do, but that he would not do anything without first letting us know. To this day we have heard nothing more about it. The Board at last resigned, and I have here the correspondence setting forth clearly what led to its resignation. We were asked to disenroll the single men, before alluded to, and to get rid of them. We were asked first, in a polite way, whether there was any objection. I replied that the objection was that the Act did not allow us to disenroll men unless they had misbehaved themselves, and these particular men had been less cost to the settlement than, and had done as much work as, the others, and that they had done it in a brotherly spirit, for the benefit of the whole, and that certainly they were the least entitled to be disenrolled of any on the Settlement. We then received a letter to say that they must be disenrolled. Something had been said in the Upper House that the single men should not have any allowance. I then replied that a special meeting should be called immediately to consider the matter, and let the Minister know the result. I called a meeting, and whilst it was taking place we received a letter to say, in effect, that it was not necessary to call a meeting, that the Minister's orders must be carried out. The Board then sought to see the Minister. He sent word that he was unable to see us; we went again, but he returned to us the same answer; we then retired to the Board Room and sent in our resignations. The correspondence is as follows:—

## PITT TOWN LABOUR SETTLEMENT.

To the Editor of the Herald.

Wednesday, 27 February, 1895.

Sir,

In view of a reported interview with the Minister of Lands contained in your Saturday's issue, it has appeared to Mr. Backhouse and myself that it might be well to publish so much of the correspondence with the Board as bears upon the subject.

It will be seen that the instructions of the Minister were distinctly to disenroll the single men. This, under the regulations, would involve their immediate dismissal from the settlement. It was to this act of injustice, not so much at the dictation of the Minister as of the Legislative Council, that the Board refused to make itself a party.

I am, &c.,

THOMAS ROSEBY,

Hon. Sec. to the Board of Control.

The following is the correspondence:—

Sir,

Department of Lands, 16 November, 1894.

In view of the recent amendments made by the Legislative Council in the Bill to amend the Labour Settlements Acts, whereby the payment of further advances to Boards of Control on behalf of unmarried persons would be prevented, I have the honor, by direction of the Secretary for Lands, to inquire whether there is any special reason which can be advanced in favour of the retention of single men as members of the settlement.

I have, &c.,

F. H. WILSON,

Acting Under Secretary.

Benjamin Backhouse, Esq., Chairman, Board of Control, Pitt Town Co-op. Settlement, Sydney.

To the Acting Under Secretary for Lands,—

Lands Department, 17 November, 1894.

Sir,

In reply to yours of the 16th instant, it appears to me that the reason for the retention of the single men on the Pitt C. Settlement is that they, in common with other members of the settlement, have been enrolled under the Act, and cannot be disenrolled so long as they comply with and are obedient to the Act and the regulations.

I have, &c.,

BENJAMIN BACKHOUSE,

Chairman of Board of Control.

Sir,

Lands Department, 6 February, 1895.

In the absence of any advice on the subject it is presumed that no steps have yet been taken by your Board to disenroll the single men who are members of the settlement; and as it appears from statements made in the Legislative Council that the Government was not disposed to supply further funds to the support of this class of settlers, I have the honor to inform you that the Secretary for Lands has decided that the single men must be disenrolled, and that aid to them must be stopped.

I have, &c.,

F. H. WILSON,

Acting Under Secretary.

Benjamin Backhouse, Esq., Chairman of Board of Control, Pitt Town Co-op. Sett., Sydney.

Sir,

Hon. B.  
Backhouse.  
3 Nov., 1896.

Sir,

In reference to your letter of the 6th instant, stating that the Minister has decided that the single men at the settlement must be disenrolled, and that further aid to them must be discontinued, I have the honor, by direction of the Board of Control, to inform you that the matter is under careful consideration, but that the final decision upon it has been deferred to a full meeting of the Board, which will be convened as soon as it has been placed in a position to meet outstanding claims, by the payment of the advance of £750 referred to in your letter of the 2nd instant, as having been brought under the notice of the Treasury on that date.

I have, &c.,

W. R. STANLEY,  
Secretary, Board of Control.

The Acting Under Secretary, Department of Lands, Sydney.

Sir,

In reply to a letter from the Secretary to the Board, stating that the matter of the disenrolment of certain members of the Labour Settlement, at Pitt Town, is under careful consideration, and that the final decision thereon has been deferred to a full meeting of the Board, I have the honor, by direction of the Secretary for Lands, to inform you that his decisions are not subject to the Board's review, and, having decided in accordance with a pledge to Parliament, that aid to single men must be discontinued, there is no course but for the decision to be given effect to.

I have, &c.,

F. H. WILSON,  
Acting Under Secretary.

Benjamin Backhouse, Esq., Chairman, Board of Control, Pitt Town Co-operative Settlement.

Dear Mr. Carruthers,

Board of Control, Pitt Town Settlement, 20 February, 1895.

In reply to your communication of the 6th instant, informing the Board that the Secretary for Lands had decided that the single men must be disenrolled, and requiring us to disenrol them accordingly, I am directed to inform you that the Board have passed the following resolution, which, if the opportunity had been presented, it was the intention of the Board to present to the Minister to-day in person:—

"1. By the regulations it is provided that persons disenrolled shall receive compensation for work done. The Board has hitherto treated all the settlers alike, and therefore feels that under these circumstances it cannot disenrol men without compensation, who legally and equitably stand on an equality with the other enrolled settlers.

"2. Under the difficult and painful circumstances which have thus arisen, consequent upon the Minister's communication of the 6th instant, the Board desires that its resignation of the 14th November, 1894, be accepted without further delay, and respectfully declines to perform any further duties in connection with the settlement."

I have, &c.,

THOMAS ROSEBY,  
Hon. Secretary, Pitt Town Settlement.

The Hon. the Minister for Lands.

We continued to act long enough to hand the matter over to another Board, of which I think Mr. Taylor was Chairman. I may here remark that I believe this Board did not disenroll the single men we were requested to disenroll. Up to that time we had had something like £6,000. £1,400 or £1,500 was, I hear, expended subsequently in what actually was the destruction of the Settlement. Up to that time things were compact and in very good order. The land was cultivated, some 4,000 fruit-trees were planted and thriving, and everything was going on very fairly well, a large number of vines were planted, and the Settlement was in a very healthy state. A large number of the huts were afterwards sold for firewood or at firewood price, 5s. or so each. I understand that during this expenditure of £1,400 or £1,500 they were selling huts and implements for trifling sums. We had purchased an incubator, a very excellent second-hand article, at a cost of £7 10s. It was very cheap at that. I understand that incubator was sold for 10s.

After the Board resigned Mr. Taylor reported to the Minister, most unfairly I thought, in reference to the position of the Settlement. Dr. Roseby, as ex-Hon. Secretary, replied to that, and I have here the report and the reply. One paragraph of Dr. Roseby's reply I will quote:—

"I do not deny that families can perhaps be maintained for less. But I shall feel glad at any rate to have no responsibility for bringing down the standard of living for those settlers to something approaching more nearly the Chinese. How paltry in this connection is the mention of currants, Friar's Balsam, tobacco leaf, and Beecham's pills? Are there no invalids on the settlement—no little children? Must they never have any pudding with currants in it? Are they to be forbidden to smoke? They paid for everything out of their scanty tokens. I am sure it was never intended that these village settlers should be treated as if they were prisoners in Darlinghurst Gaol. The only crime of which they are guilty is that of being poor."

With regard to the tokens, I may mention that a man received about 5s. a week and a woman about half that, and children in proportion. Most of the large families had not more than 10s. worth of tokens a week, and we know that they could not live sumptuously on that amount.

360. *Mr. Watson.*] The goods were supplied, I believe, at wholesale rates, plus the freight? Yes, I believe so. A sub-committee, of which you were a member, had charge of that. I think that Mr. Taylor's report was a most unfair one.

361. Did Mr. Taylor evince any desire to advance the Settlement whilst acting as adviser to the Minister, and whilst the Board of which he was a member was in existence? I think the statement I propose now to make will answer that.

During the time that we had charge of the Pitt Town Labour Settlement it was not a failure. Men and grown-up children worked for their living, and they earned all that they received. They did substantial work, which might have been useful to anyone, but especially to the settlers themselves. I maintain that if our recommendations had been carried out the Pitt Town Settlement could have been carried on notwithstanding all the drawbacks. From time to time the Government valued all the settlers' labour and fencing, clearing, &c., and it was worth at least what it cost to maintain the settlement, whilst substantial benefit accrued in the improved physique of the settlers. Some of those poor men went up there mere wrecks, but in three months they were comparatively strong, hearty men. The children taken from the slums of the city were educated. During the nineteen or twenty months that the first Board of Control had charge there were 100 families, some 450 persons, living in a wholesome country life, and the virtue and good order of the Settlement were equal to the average, if not above, that of the people outside. The disorder which did arise the Board could have more effectually dealt with if the Board had received the help and sympathy to which it was entitled. Had we had a scientifically trained man told off to assist the Superintendent I am sure the results would have been much more satisfactory. There was an advantage in taking the people from their bad city surroundings, and I claim that as a credit as against the cost of carrying on that Settlement. It would have cost the Government probably £2,000 or £3,000 had the men remained in town. One of the things which prevented the Settlement from succeeding as it might have done is shown by the fact that two Ministers who were charged with the administration of the Act never believed in the thing, and never treated it as though they

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they expected it to succeed. I remember some of the settlers saying on several occasions, "Do you think we shall get any more money? If not, we shall have to remove." There was nothing certain about it, and there is also the fact that settlers had been permitted to complain secretly to the Minister, thus the discipline of the Settlement was taken out of the hands of the Board. We found it then necessary to alter our regulations. If we had had a little more hold upon the settlers, a little more stringency, we could have educated them, so that at the end of four years, when rent had to be paid, the settlers would have been able to take the management into their own hands. I refer you to paragraph "A." in my letter, 15th September, 1894, to Mr. Carruthers. What they wanted was strict discipline, until a good advance had been made in the settlement. I have not gone into the matter as fully as I might have done, but I have touched upon some of the principal points.

362. *Mr. Watson.*] I asked you a question as to the attitude assumed by Mr. Taylor, who was acting as adviser to the Minister. Did he ever evince any desire to help the idea of co-operation? I would much rather that you got the answer to that from him. My impression is that he was very much against the principle, that is to say, he had no belief in it, and that was the unfortunate position in which we were placed, as Mr. Taylor was the Minister's adviser, in reference to almost everyone who could help us. I feel that the Minister, having some gentlemen who were giving their time to it, and who were working hard to make it a success, might have said, "Can I help you? I should like to see this thing succeed. If there is anything I can do I shall be very glad." If we had had sympathy of that kind there might have been a different result.

363. *Mr. O'Sullivan.*] You complain about the settlers writing to the Minister, which Minister did they write to? To Mr. Copeland, and I believe it was continued after Mr. Carruthers took office.

364. And they wrote to both Ministers secretly? Yes, but it commenced in Mr. Copeland's time.

365. Did they write to complain of any want of attention on the part of the Board,—of any fault to be attributed to the Board? No. I think the first trouble arose in this way. Mr. Waite, one of the settlers, a very excellent man, was appointed after the paid Superintendent left as Superintendent without pay. He evinced such active zeal, and worked so hard that the Board proposed to give him some trifling amount, but he at once said as a true co-operator "No, I would rather take my stand in the Settlement and be one of the co-operators." He was a stranger to the Board before he went there, but we found such sterling good qualities and capabilities in the man that we had no hesitation in appointing him Superintendent. We found at first that all the men were most loyal to him, and that they were pleased that one of their members had been appointed Superintendent, but in three months time a different state of things developed. They got a little annoyed at their Superintendent, and thought they could have a better one.

366. *Mr. Watson.*] Some of them? Yes, some. There was always a great number attached to him, and loyal right through. A section began to grumble, and they thought there was favouritism; but the Board could see no evidence that it existed—quite the contrary.

367. *Mr. O'Sullivan.*] Do you think that was the cause of the settlers writing to the Government? Among other things it was. I think they wished him to be removed, and the Board too.

368. Some of the settlers blamed the Board;—they attribute the failure partly to the Board, and one charge is that of favouritism? That of favouritism was absolutely wrong.

369. Did you enforce your regulations too harshly? No; we were remarkably mild—too mild—and we found that would not do.

370. Who was it that made the complaint about the settlers buying Friar's balsam, Beecham's pills, jam, and other delicacies with their tokens? That was after the Board resigned. It was in a report to the Minister by Mr. Taylor.

371. *Mr. Watson.*] With regard to buying jams and other things, I suppose that a settler who desired to have little luxuries would have to go without something else in order to get them? Exactly so. It was not allowed as an extra. The settler who bought those things would have to pinch himself in some way—generally in meat, which could be done with advantage.

372. You said that whilst the Government was spending £1,500 on the Settlement the huts were being sold for firewood, and other destructive work was being carried on? This is what I have heard; but I think you can get evidence that huts of three rooms were sold for 5s. or 6s. each.

373. Who gave orders for that? I do not know. That was after our time.

374. For whom was Mr. Taylor acting? For the Government.

375. For the Minister for Lands, Mr. Carruthers? Yes. You can get all the particulars from Mr. Taylor as to what took place after the resignation of the Board.

376. *Mr. O'Sullivan.*] You have stated what you believe to be the cause of the failure of the Settlement; have you included all the reasons for the failure? Perhaps not, but the main cause was want of sympathy with the movement from persons outside the Board. Not a single man of influence or the public at large helped the Board.

377. Do you think that the men themselves had faith in the co-operative principle? When they started they had, they said so, and the "Epitome" given to them to read at first, and the copy of the Regulations given to them when they signed the agreement is evidence of this.

378. Some of the men have stated that they regard co-operation as a failure in that Settlement, but that they would be willing to try it with a selected few; do you think that the men themselves had faith in the co-operative principle? After experience it turned out that some of the men had faith in it and knew what it was, but some did not know what it was, and do not to this day. They began to clamour as the children of Israel clamoured against Moses. Had we had the sympathy and assistance that we ought to have had, we could have educated the men up to it.

379. Do you think you would have dragged the Settlement through if the settlers had lost faith in the co-operative principle? We could have drafted some of the unsuitable ones off to other work, as recommended to the Minister in the paper I have read.

380. Then you would simply have had the survival of the fittest? The survival of those impressed that co-operation was the best thing for them.

381. We were making a test of the Pitt Town Settlement, as to whether the principle could be applied to humanity; you say it can be applied to a selected few? Yes. Had the men been united and friendly they might have made it a success; but they were opposed to each other, and jealousy crept in.

382. What was to be done with all those who are not amongst a selected few? They were free agents,  
and

Hon. B.  
Backhouse.  
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and could retire. They were not deceived; they had a printed document put into their hands to read, and if they had said we do not believe in the principle their applications would not have been considered. 383. The Settlement was started to see whether it could be safely applied to dealing with the unemployed difficulty, and now you seem to admit that it can only be applied to a select few? This was a matter of experience with us. We found subsequently, that had these men met together and discussed the matter, and gone on to the Settlement as mates, they would probably have done much better.

384. The point I want to get at is, whether the Settlement has had a fair trial as an experiment to show whether the principle can be applied to the unemployed people of the country? I say distinctly that it has not had a fair trial; that is why it failed.

385. One reason, you say, is that the men were not a selected few; and you said that if they had had a sort of freemasonry or a religious bond they might have succeeded? Yes; if Catholics, or Presbyterians, or members of any other denomination had formed themselves into groups they might have succeeded.

386. You had no religious differences? No; but you could not expect Catholics and Weslevans to unite heartily together, as they would amongst members of their own denomination. Our great drawback was not having the support, sympathy, and aid of those around us who were able to help us, but did not do so.

387. *Mr. Watson.*] By those, you mean the officials? Yes; principally those who administered the Act. I think the Ministers took the inactive part which they did on the advice of someone in whom they had confidence—probably someone in the office—and that advice was against the principles of the settlement.

388. As regards the failure of the Settlement, in what proportion do you think it was due to the fact that the land was of poor quality and water was non-existent? It is difficult to estimate that. Had we had good land and a supply of water the men would have had better heart in the work.

389. Do you think it would have given a better chance of success? Undoubtedly.

WEDNESDAY, 11 NOVEMBER, 1896.

Present:—

MR. DICK,

MR. J. C. WATSON,

MR. KELLY.

W. M. HUGHES, ESQ., IN THE CHAIR.

Rev. Thomas Rosoby, LL.D., F.R.A.S., sworn and examined:—

Rev.  
T. Rosoby.  
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390. *Chairman.*] Do you wish to make a statement? I should like in the first place to indicate in what respects it seems to me the Settlement was not a failure. I should like to indicate some features of the system that I think show that there were, after all, elements of success in it. In the first place, there were 100 families, roughly speaking, placed on the settlement, and the men themselves and their children did not "eat the bread of idleness." It is a great mistake indeed to think that there was anything about the system that pauperised those who were interested in it. Those men worked for their living. Then the Government appraisalment shows that the value of their labour, estimated as the value of any other labour would be, fell not far short at any rate of the amount advanced. Their huts, and the amount of fencing they did, clearing, the roads which they made, and water conservation—the aggregate value of these, according to the Government appraisalment, fell not far short of the amount of money advanced by the Government to the Settlement. Then it was really a labour settlement. That, I think, is a point to which sufficient attention has not been directed. It is the name given to the Settlement in the Act itself; and, as a labour settlement, it was only a failure inasmuch as the land selected was unsuitable for such a purpose. It turned out that the land was only suitable for orchard purposes. Of course, it was originally a common, and the timber left on it by the residents around who used it as a common was only good for firewood, the best having been cleared away before; and the distance from Sydney, the low rates ruling, and the railway charges, made firewood-getting unremunerative. There was left a margin, I understand, of something less than is a ton in connection with that industry; and yet, practically, whilst the crops were growing, and the orchard trees were growing, that was really the only means of maintaining the settlement. Then, further, the hundred families there lived a wholesome country life; their children were educated; there was neither drinking nor gambling allowed on the settlement, and there were few serious complaints of idleness. I feel disposed to emphasise that. I think it speaks well for the general character of our labouring community, that amongst 100 men, somewhat indiscriminately gathered together, working under the conditions that there prevailed, under the surveillance of one another, there were so few serious complaints of idleness. A policeman only visited the Settlement two or three times in the course of two years, and there were on the Settlement no social scandals; the virtue and good order of the Settlement were far above the general average. Further, these people received considerable training in agriculture, from which they would have derived still more benefit had the land itself been agricultural. That, I think, was really the capital mistake made in starting the Settlement. I may say that it was a mistake for which the Board was in no way responsible. The land was selected for us under expert advice by the Minister. I have always felt that the great mistake was that the land was not suitable for an agricultural community. There was a demand for immediate results, yet we were planted on orchard land, where it was unreasonable to expect any return under five or seven years. Then, moreover, these people were a burden on the charity of the community before they were sent there; and many of them became a new burden upon it when the Settlement was practically disbanded. I think that a very important thing to emphasise, because, as a matter of fact, whilst they were maintained on the Settlement they were maintained living an industrious life. As far as we could see, when these hundred men, selected out of about 500 applicants, when these men were selected, they belonged hopelessly to the class of the unemployed, and the chances are that, had they not been maintained on the Settlement in work, they would have been maintained in the community to a large extent in idleness. I pass on to notice, secondly, to what the failure of the Settlement was its due. I should like to speak of that. First, it was not due to any inherent weakness of socialism, for it was not really a socialistic experiment. The Board consisted in part of men who had not the least sympathy with socialism, yet those gentlemen worked with us in hearty co-operation until the Board resigned. There were gentlemen upon that Board with whom we worked, with the greatest cordiality, and who gave us the greatest assistance in carrying out the work of the settlement, who had no sympathy with socialism whatever. They stood by the scheme as  
· being

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being an experiment in co-operation. There was, of course, an element of co-operation in the scheme, but the scheme was rather that of a mild despotism than of socialism. You can hardly imagine two things more absolutely the antithesis of one another. The Board had absolute control. They might disenroll any settler, and the settlement was subject to regulations made, not by the settlers, but by those controlling them. Second, the failure of the settlement was not due, as is commonly supposed, to internal dissensions. I may qualify that statement a little later on; but I may begin by saying that the families, amongst one another, kept the peace, and then, as for academic discussion among them (home rule was a very common subject of discussion, and political economy also), there was really no more of acerbity about these discussions than there is in similar discussions elsewhere, and really no more harm in them. I qualify this statement, however, by saying that some serious disaffection there did exist, but it arose from attempts to get behind the back of the Board by writing to the Minister. Third, the real causes of the settlement's failure. It seems to me, Mr. Chairman, that the real causes of the failure were these:—An experiment carried on with men on the lowest social grade, with no means, and no social coherence, could only be expected to succeed under specially favourable conditions—namely, good land, Governmental and public sympathy, and steady and adequate help. All these conditions were wanting. First, the land foredoomed the experiment to failure. Old residents and surveyors to whom I spoke at the very inception of the experiment on the spot, declared that the Settlement would be a failure. They, from their better knowledge of the land than we possessed, from their own experience, declared that on such land it was impossible to carry on a successful experiment of this nature. The land was declared to be orchard land, and not very good at that; but for agriculture, it was alleged to be wholly unsuitable. Secondly, the Government never believed in the thing, and never treated it as if they hoped or expected it to succeed. Third, the help given was given so fitfully, and so uncertainly, that the Board several times resigned because we were not certain but what we should be made personally liable. That is practically the statement which I feel it incumbent to make to you in regard to the fortunes of the Pitt Town Settlement. I should like to say in respect to Waite, whose name has been mentioned in the course of the proceedings of the Committee, that I have formed a very high opinion of Waite, both as to his personal character and his capacity for dealing with large bodies of men. As to his establishment as Superintendent of the Settlement, I must say that I never altered my opinion about Waite from the start, except to think better of him. It is quite true that there was occasionally friction—sometimes serious friction—between himself and a certain portion of the settlers—certain elements upon the Settlement; but we could always trust to the straightforwardness and probity of Waite; and, on the whole, we considered, especially as compared with the success of others in the superintendency, that Waite's influence upon the Settlement was throughout an influence helpful to the Board and promotive of the best interests of the Settlement. I should like also to say, in respect to the statement made as to the infrequent visits of the members of the Board to the Settlement, that that statement is incorrect. Some one or other member of the Board made frequent visits to the Settlement, and in respect to the labour that was involved, especially to the officers on the Board of Control, I can only say—and I specially single out Mr. Backhouse in this statement—that their attention to the Settlement was unremitting—their attention to its needs and its complaints. That attention was, by Mr. Backhouse especially, daily bestowed.

391. *Chairman.*] You spoke of the frequent visits of the Board—what were the average attendances? I should think that the Settlement was rarely without a visit from some member of the Board once a week.

392. What, in your opinion, was the chief cause of failure? You did not, perhaps, catch the last part of my statement. I attribute the failure of the Settlement to the fact that the land was unsuitable; that the Government never really believed in the thing, and never treated it as if they hoped or expected it to succeed, and that the help given was given so fitfully and so uncertainly.

393. Which of these two causes was the greater in bringing about the downfall? I should feel disposed to say that under any management, or under any favourable circumstances whatever, it was impossible for the settlement to be a success, because the land was unsuitable.

394. We have been told that some of the private settlers living on land there had been successful from individual effort with a fair amount of capital;—how do you account for that? I cannot speak on a matter as to which I could only offer a conjecture, but it would appear to me that in the case of settlers in the neighbourhood, who settled at an earlier period, they would, of course, have much better timber to send to market; they would have not only firewood, but timber really useful for building, and that kind of thing, and they may have been able to rely upon dairying, and so on. Of course I cannot speak from any real knowledge of that matter, but I am perfectly certain, from the accounts given by those who know the land best, and by our own actual experience in endeavouring to work the Settlement, that the experiment was an absolutely hopeless one on that land.

395. *Mr. Watson.*] Is it not probable that the earlier settlers would get the best of the land that was available? Undoubtedly.

396. *Chairman.*] You think that the land used for the Settlement was even worse than the surrounding land? I have no doubt that it was.

397. With reference to what you said of the scarcity of timber, how does that tally with the settlement later on starting a saw-mill and cutting up firewood for sale;—was there not a certain amount of timber, by cutting which a living could be made? There was firewood, and it was for cutting firewood that the saw-mill was started, but there was very little useful timber. Timber useful for the arts for example, and for building, all that had been culled away before our Settlement was started. It was a common, and the best of the timber had been taken.

398. You consider that the good timber having been taken off the land was really a serious drawback? In default of agriculture as a means of keeping the Settlement going, we naturally turned to the timber that was growing on the land as a source of revenue; and we were very much disappointed on taking stock of it to find that it was only a residuum, and was only available for firewood. The return in the matter of firewood was something less than a shilling a ton when all expenses were paid.

399. Of course you would not have turned your thoughts to cutting firewood had the land been suitable for agriculture? No.

400. In your opinion the badness of the land was the chief cause of the failure? Undoubtedly.

401. But bad management had something to do with it? In what way?

402. In this way: of course, you and those who are sympathetically inclined did not any time form a majority of the Board? Yes. The Board of Control, I may say, almost up to the last two or three meetings,

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meetings, was practically unanimous in all the actions it took in relation to the Settlement. The bad management to which you refer was the capital mistake in the first instance of selecting unsuitable land. That, no doubt, was a capital mistake, but that was not the act of the Board of control. It was the act of the Minister only. Let us say this in respect to the action of the Minister, that he was guided in that respect by expert advice.

403. As a matter of fact, agriculture has now reached the stage at which it may be termed almost an exact art, and amongst those superintendents that you had was there a man who had any knowledge at all of agriculture, or who knew how to deal with large bodies of men? There were two gentlemen appointed successively as superintendents before we fell back upon Mr. Waite at all. Mr. Waite was our last superintendent. There were two other gentlemen who preceded him, both of whom, I believe, were very competent to carry on works of that nature, both of whom had considerable experience in agriculture, but expert knowledge in agriculture was completely thrown away upon land that was unsuitable for agriculture.

404. But, at the same time, it is not to be denied that it is upon land that is called unsuitable that expert knowledge is most useful;—upon good land, of course anybody can succeed? Yes: but still, as you know, that intense culture is only remunerative under circumstances wholly different to the carrying out of any experiment of this nature, with people who, to start with, had only a very elementary knowledge of the thing at all.

405. Had you any skilled men? There was Mr. Vaughan Jenkins and Mr. Tressider. They were men really skilled in agriculture.

406. Were they there constantly? They lived on the Settlement, and directed its operations on the spot.

407. How long were they there? Mr. Vaughan Jenkins was there three or four months, and Mr. Tressider for a longer term; I should think about six months.

408. It appears to me that it was hopeless to expect the Settlement to succeed on any other basis than one of intense culture; here were men who did not wish to compete without outsiders at all;—seventy-five per cent. of them were able to do the work if properly directed, and witnesses prior to yourself, say that bad management had a great deal to do with it? I have no doubt. I would not have dissented from that statement myself. I have spoken in the case of those two gentlemen of their knowledge of agriculture, but in other respects there is no doubt that their management of the Settlement was anything but a success.

409. You speak of this as being only partially an experiment in socialism, and you say that you regard it as a kind of mild despotism? Just so.

410. Do you regard the failure of the Settlement or the closing up of the Settlement as evidence of the failure of co-operation? Certainly not. I believe that if an experiment of this nature was started, with such modifications of course as experience would suggest, upon good land, and was sustained by a Government that was in sympathy with the scheme, that heartily believed in it, and that worked it with a view to success, an experiment of this nature might be made a splendid object lesson in showing how to get rid of a great deal of the trouble and anxiety occasioned by this army of unemployed. I am very strongly of that opinion.

411. Do you regard the action of the department in compelling those people who were actually willing to remain on the Settlement, some twenty-five or thirty families, when the Government aid had been withdrawn, do you regard the action of the department in ousting them, as consistent with a real desire on the part of the department to establish these people in a way to get their own living? I should not like to speak harshly of the action of the department in dealing with these men, although I think that the action of the department was mistaken. If they had kept a few men upon the Settlement, such as might have some prospect of remuneratively working it, and made a sort of nucleus for something further, a sort of dépôt, I think the Settlement might have been made very serviceable indeed in helping us out of our industrial difficulties.

412. Do you know that it is proposed by the Department of Industry to transform the settlement into a casual labour farm? Yes.

413. *Mr. Watson.*] Is it a fact that the first Board of Control recommended to the Minister some time prior to their resigning that the number of men on the Settlement should be reduced, and that the reduced number should be given an opportunity to make a living, which would perhaps be possible, even though the land was bad? That is so.

414. Do you think that that reduced number, somewhere about twenty-five families, would have been able to make a living if the recommendation had been carried out? I think it is not improbable that they would. They would have a larger area, and might be able to select the most suitable parts of it.

415. And would have the benefit of the improvements already made? To be sure.

416. In addition to which there would have been the same community of interests, the men being mutually selected? To be sure.

417. You have spoken of the fitfulness of the manner in which help was given to the Settlement. I presume that you were referring to the amount to be paid by the Government towards the keep of the settlers? The way in which we felt it, whether it was due to the action of Parliament or of the department, was that we were sometimes left wholly uncertain as to when we should receive the necessary subsidy, or how much it would be, or even whether we were going to get it at all, and that introduced an element of uncertainty into the whole thing, to such an extent that the Board was on several occasions on the point of resigning, and did, in fact, send in its resignation, because it was without ways and means to carry on the settlement.

418. Do you think that that was due to any want of sympathy on the part of the officials of the department in the general scheme? I am quite sure that neither the Minister nor the heads of the department had any belief in the scheme, or worked it with any hopefulness that it would be a success.

419. *Mr. Kelly.*] How long after the initiation of the Settlement did it dawn upon the Board that the soil was altogether unsuitable? Not for some months. I should think not till we had made actual trial of the Settlement, and even then, the cultivation being confined to the best part of the Settlement, the results were really delusive. There were, of course, many things grown upon the Settlement which, when exhibited to us, seemed to show that something might be made of it as an agricultural settlement, but as a matter of fact this cultivation was only on the very best part of the Settlement. The area was extremely limited, and it gave no proof at all that the Settlement as a whole was suitable.

420. Do you think it would be an explanation of the department's want of sympathy with the scheme to  
take

take the supposition that they became convinced that the site was unsuitable, perhaps before the Board did? About that I am not sure. A good deal was said in Parliament about the unsuitability of the land, and though we combated the statements made in Parliament at first, relying as we did on the expert testimony that the land was suitable, still they may have influenced to some extent those who had control of the purse.

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421. Was it ever considered, at any time, that you should get a change of site? We made strong representations to the department once or twice, with the view of altering the boundaries of the Settlement in order to include better land, but the Minister refused to make any alterations.

422. There was better land available? There was.

423. And the department refused it? They refused it. I do not complain of their refusing it altogether. They had possibly in view the idea of selling the land to make more out of it for the public exchequer. I doubt whether it would have made any difference in the end.

424. *Chairman.*] What led to the resignation of the Board? That which led to the final resignation of the Board was the resolution of the Government to do an illegal thing, to dismiss from the Settlement certain settlers whom we had no power to disenrol. According to the Act we were only empowered to disenroll for certain definite reasons. Those reasons were entirely wanting in the case of those unmarried men. There was no other way of sending those men off the Settlement. Moreover, it was felt that it was an unrighteous thing to do. Those men, not having the encumbrances of men with families, helped to keep the Settlement going. They rendered disproportionate assistance, and it seemed an ungrateful thing, after their rendering more than their share of help towards making it a success, that they should be dismissed on grounds which had no justification in the statute.

425. Did you feel that the conditions were becoming so strained that you could not remain a Board any longer? We felt that we were called upon to do an unreasonable thing, and really an illegal thing. I may say that it would have been a great pleasure to many of us to have carried on the experiment if we felt that we were sustained by the sympathy of the Administration, but we felt that we were carrying on something in which the Government itself did not believe—that they did not sympathise with us in carrying on the experiment, and some of us began at last to feel a little weary of it.

426. Did the Board which was appointed after your Board resigned disenrol the single men after all? I really do not know.

427. Would it have been an illegal act? I believe it would. We had no power to disenrol settlers except on certain grounds laid down in the Regulations. We could not disenrol them on the grounds of mere convenience.

Benjamin Backhouse further examined:—

428. *Chairman.*] Have you anything further to say upon this subject? The first superintendent appointed was Jenkins, the second was Waite, and the third was Tresseder; the fourth was Waite. That was their order. The first superintendent, as Dr. Roseby has just mentioned, proved unsuitable in the opinion of the Board.

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429. Is it true, as alleged by one of the witnesses, that Mr. Jenkins was often intoxicated? I could not say so from my own knowledge. It was common rumour, and his actions gave strong colour to it. I should like to point out that the Board of Control took great pains to obtain a good and suitable man, after selecting from a number of applicants. We then reported to the Minister, who had to approve of the appointment and the salary to be paid. There was a proposal to remunerate Mr. Jenkins in some other way; but the Minister objected, and said that there were plenty of men to be had at £3 a week, and that was the stipulation for Jenkins' services. Then came Mr. Waite. He was certainly one of the best settlers that we had, a thoroughly capable, conscientious, good man. We made application that Waite, not being an expert in farming, although a peculiarly good all-round man, should have the periodical assistance of an agriculturist from the Agricultural Department, but he did not get it, and that was one of the elements of non-success. It came occasionally, but there was no regularity about it, and no one took the interest in it that was required. When some of the settlers began to object to Waite as superintendent, Mr. Waite himself asked to be relieved from the position, and applications were invited by the Board for a paid superintendent, and Mr. Tresseder, out of a number of applicants, was appointed. As a manager of men, and as an agriculturist and horticulturist he had high testimonials, and had previously held a Government position. We found that he was not a success, and we again fell into a difficulty with regard to a superintendent. When Mr. Waite was asked to resume the position, which he did, and held it until within about two months of this date. I referred to the saw-mill in my evidence the other day. I think Dr. Roseby will bear me out when I say that my feeling was that, unless we wanted a saw-mill for the settlers to work for themselves, it was a mistake to get one. The commercial element on our committee was pretty strong, and the minority fell in with the proposal. As Dr. Roseby has pointed out, there was great unanimity amongst the members of the Board, because the minority easily gave in to the majority. A large majority were in favour of the saw-mill. I think I was almost alone in my views on that matter. I said, true to my sentiment, when the Settlement was started, that it should be self-sustained, that it should work for itself, and keep itself, and that a number of these settlements might federate and make a commonwealth. I said, "We are not going to compete with the poor wood-cutters and others in the locality, even if we could by means of the saw-mill, as that would be contrary to the principles of the Settlement."

## PITT TOWN SETTLEMENT.

## APPENDIX.

SUMMARY of Receipts and Expenditure of the Pitt Town Labour Settlement from the 13th July, 1893, to the 8th July, 1896.

<i>Receipts.</i>		£	s.	d.	<i>Expenditure.</i>		£	s.	d.
To Colonial Treasury .....		7,691	1	9	By Maintenance.....		5,999	0	7
Wood sales .....		850	1	0	Plant .....		1,234	8	6
Sale of bricks .....		88	12	3	Improvements .....		474	5	7
Sale of vegetables, stores, &c. ....		12	2	6	Working expenses .....		1,244	11	4
Produce sales .....		28	0	10	Cartage of wood.....		74	11	7
Sale of sundries .....		1	1	3	Rushes for brickmaking .....		2	0	0
Smithy account .....		10	4	11	Refund to Treasury .....		1	0	9
Tare, discount, and refunds .....		21	1	5					
Rent of room and paddock .....		16	7	6					
Postmaster's salary.....		4	6	10					
Cleaning latrines at school .....		17	1	3					
Sundries .....		9	16	3					
Sale of sheepskins .....		33	10	11					
Road-making .....		210	0	0					
Village settlement committee .....		72	0	0					
Sundry collections and subscriptions .....		14	9	8					
		£9,079	18	4			£9,079	18	4

NOTE.—A further advance of £13 18s. 3d (making up a total of £7,705) was made by the Treasury to recoup the Department of Lands for moneys paid for freight to the Railway Commissioners on account of the Board of Control.—W. R. STANLEY, 12/11/96.

RECEIPTS and Expenditure of the Pitt Town Co-operative Settlement as to 31st December, 1893.

<i>Receipts.</i>		£	s.	d.	<i>Payments.</i>		£	s.	d.
From Colonial Treasury .....		2,316	1	9	Stores for maintenance, &c., including rail- way freight on settlers' goods.....		1,043	10	9
NOTE.—A further sum was paid by the Treasury to the Railway Department on account of the Settlement, bringing up the amount to £2,330.					Cartage on wood sold .....		4	5	7
From Village Settlement Committee .....		60	0	0	Plant, &c., including bullocks, horses, gear, and tools.....		582	3	3
Sundry gifts, concert, &c. ....		12	8	0	Improvement account, huts, dams, &c. ....		118	7	2
Discounts and refunds.....		5	5	4	Working expenses, forage, &c. ....		292	9	1
Proceeds of sales of wood, &c. ....		18	9	7	Balance in Bank .....		371	8	10
		£2,412	4	8			£2,412	4	8

We hereby certify that we have examined the above Statement, and compared it with the books and vouchers, and find it contains a correct account of all moneys received and paid by the Board of Control.

Sydney, 12 February, 1894.

RANDOLPH NOTT, } Hon. Auditors.  
H. ROOKE JONES, }

RECEIPTS and Expenditure of the Pitt Town Co-operative Settlement for the period ending 31st July, 1894.

<i>Receipts.</i>		£	s.	d.	<i>Payments.</i>		£	s.	d.
To Balance at Bank as per last statement ..		371	8	10	By Stores for maintenance, &c., { 1,204 6 7 including railway freight { 17 0 1 on settlers' goods, &c. ... { 11 10 0 1 14 10		1,234	11	6
Colonial Treasury .....		1,000	0	0	Plant, including tools, implements, live stock .....		56	5	11
Government contracts—					Improvement account, buildings, seed, &c. ....		89	8	8
Clearing and forming Windsor-Dural road .....		210	0	0	Working expenses, forage, &c. ....		250	14	8
Donations, &c.—					Balance in Bank .....		23	5	10
Collections at Horticultural Society's Show .....		1	1	8					
Village Settlement Committee .....		12	0	0					
Miss Tilley .....		1	0	0					
			13	11	8				
Proceeds of wood sold .....		36	14	5					
Sales of sheepskins .....		19	4	10					
Sales of stores, &c. ....	{ 0 14 0 2 12 10								
			3	6	10				
		£1,654	6	7			£1,654	6	7

## Memo.

	£	s.	d.	
Debts due to sundry creditors on 31st July, 1894, as per schedule attached.....	950	13	9	
To be debited to following account—				
Maintenance .....	{ 378 5 1 1 13 8 2 12 6			
		382	11	3
Plant.....		352	1	10
Improvements .....		175	11	7
Working expenses .....		40	9	1
		£950	13	9

We hereby certify that we have examined the above statement and compared it with the books and vouchers and find it contains a correct account of all moneys received and paid by the Board of Control.

Sydney, 5th September, 1894.

RANDOLPH NOTT, } Hon. Auditors.  
H. ROOKE JONES, }

RECEIPTS

## RECEIPTS and Expenditure of the Pitt Town Co-operative Settlement for the period ending 31st January, 1895.

Receipts.		£ s. d.		£ s. d.		Payments.							
To Balance at Bank as per last Statement .....				23	5	10	By maintenance, including stores	1,227	7	9			
Colonial Treasury .....				2,120	0	0	maintenance, including						
Proceeds of wood sold .....	149	10	5				freight on settlers' goods	2	17	1			
Sale of sheepskins .....	14	6	1				maintenance, including						
Sale of bricks .....	11	5	0				funeral expenses .....	2	0	0			
Sale of milk .....	6	18	5							1,232	4	10	
Sale of stores, vegetables, &c. ....	2	1	11				Plant, including tools, im-				483	18	7
Erecting bell post for school .....	2	10	0				plements, live stock .....				222	5	2
Hire of room for polling .....	2	0	0				Improvement, including building, seed, &c. ....				319	15	10
Smithy account .....	0	1	6				Working expenses, including forage, &c. ....				70	6	0
				188	13	4	Cartage of wood .....				2	0	0
							Rushes for brickmaking .....				1	8	9
							Balance at Bank .....						
				£2,331	19	2					£2,331	19	2

MEMO.—Debts due to sundry creditors on 31st January, 1895, as per schedule attached—£715 19s. 3d.

We hereby certify that we have examined the above statement and compared it with the books and vouchers, and find it contains a true account of the moneys received and expended by the Board during the period named. Outstanding debts at same date, £715 19s. 3d.

Sydney, 15th March, 1895.

RANDOLPH NOTT.  
STEPHEN SULLIVAN.

## RECEIPTS and Expenditure of the Pitt Town Co-operative Settlement from the 1st February, 1895, to the 30th June, 1895.

Receipts.		£ s. d.		£ s. d.		Expenditure.							
To Balance at Bank as per last statement .....				1	8	9	By maintenance, including						
Colonial Treasury .....				2,005	0	0	stores .....	1,548	7	2			
Proceeds wood sold .....	191	8	6				Maintenance, including						
" Bricks sold .....	41	3	3				freight on settlers' goods ..	3	18	5			
" Vegetables, stores, &c., sold .....	4	9	2				Maintenance, including						
Proceeds millet and sorghum sold .....	17	12	3				funeral expenses .....	7	12	8			
Proceeds tea lead sold .....	1	1	3							1,559	18	3	
				255	14	5	Plant, including tools, im-				119	15	7
Smithy and wheelwrights shop .....							plements, live stock .....						
Tare allowed .....							Improvements, including						
Rent of room in superintendent's cottage .....							building, seeds, &c. ....						
Rent of paddock .....							Working expenses, includ-				160	8	4
Postmaster's salary .....							Balance at Bank .....				397	3	3
Cleaning school latrines .....													
Prize for brickmaking .....													
12 daily posts twice charged .....													
				£2,277	1	3					£2,277	1	3

We hereby certify that the above statement contains a true and correct account of all moneys received and expended by the Board of Control during the period named.

HENRY C. TAYLOR.  
JAS. WATSON.  
JOSEPH CREER.

EXTRACT from report of Conditional Purchase Inspector J. B. Brown on Pitt Town Settlement of 30 August, 1894:—"There were improvements, working plant, and live stock upon the land, which I value at £4,353, as detailed herewith. This is exclusive of a large amount of small tools and stock in store, a detailed list of which, I was informed, had been forwarded to the department."

120 Residential and other huts at £8 .....	960	0	0
Superintendent's house .....	40	0	0
Stone dairy (shingled) .....	40	0	0
Store and offices .....	50	0	0
Stable and shed .....	40	0	0
Grain store .....	20	0	0
Milking shed .....	20	0	0
Wheelwright's shop and tool store .....	35	0	0
Slaughter-yard, piggery, fowl-yards, &c. ....	23	0	0
Saw-mill shed (incomplete) .....	25	0	0
13 acres orchard, of which 4 acres are trenched ..	365	0	0
105 acres cleared and cultivated .....	840	0	0
10 acres cleared .....	70	0	0
60 acres partially cleared (nearly complete) ..	300	0	0
9 miles chock and log fence .....	450	0	0
100 rods 3-rail, split .....	20	0	0
280 rods 2-rail, split .....	42	0	0
96 rods of paling .....	24	0	6
4 miles combination fences (around residence) ..	192	0	0
16 dams and excavations (5,000 yards) .....	250	0	0
80 chains drains .....	20	0	0
Well .....	20	0	0
Saw-mill (cost price, as informed) .....	220	0	0
4 drays, spring cart, harness for each .....	60	0	0
Ploughs, harrows, scarifier, chaff-cutter, &c., &c. ....	80	0	0
13 bullocks, waggons and gear .....	65	0	0
17 cows, 9 calves, and bull .....	80	0	0
6 pigs .....	2	0	0
	£4,353	0	0

COPY

Copy of Schedule attached to Report of Conditional Purchase Inspector J. B. Brown on Pitt Town Labour Settlement, dated 26th October, 1894.

	£	s.	d.
120 residential and other huts.....	960	0	0
1 superintendent's residence .....	40	0	0
10 outbuildings.....	271	0	0
16 dams and excavations, 7,000 yards.....	350	0	0
18 chains drains .....	20	0	0
1 well .....	20	0	0
9 miles chock-and-log fence, 280 rods 2 rails split, 100 rods 3 rails split, 107 rods wire netting, 300 chains miscellaneous fence around lots .....	741	19	0
13 acres orchard .....	195	0	0
4 ,, trenched.....	180	0	0
105 ,, cleared and cultivated.....	840	0	0
21 ,, cleared .....	147	0	0
60 ,, partially cleared .....	300	0	0
1½ ,, ornamental trees around settlement.....	22	10	0
Saw-mill (cost as informed) ..	220	0	0
Working plant—stock, consisting of 12 horses, 16 cows, calves, and bull; 6 carts; harness; 13 bullocks and waggon; ploughs, harrows, scarifier, chaff-cutter, &c., &c.	300	0	0
	<u>£4,655</u>	<u>9</u>	<u>0</u>

Copy of Schedule, with Report dated 18th February, 1895, on Pitt Town Settlement, by Conditional Purchase Inspector Brown:—

	£	s.	d.
120 residential and other huts.....	960	0	0
Superintendent's residence .....	40	0	0
Outbuildings (10) ..	271	0	0
16 dams (7,000 yards excavated) .....	350	0	0
80 chains drains .....	20	0	0
1 well .....	20	0	0
12½ miles chock and log fence, 100 rods 3 rails split fence, 280 rods 2 rails split fence, 3½ miles miscellaneous ..	929	9	0
13 acres orchard .....	195	0	0
4 ,, trenched.....	180	0	0
1½ ,, ornamental trees .....	22	10	0
144 ,, cultivated .....	1,152	0	0
48 ,, cleared .....	296	0	0
102 ,, partially cleared .....	960	0	0
Stock—consisting of 14 horses, 17 cows, 1 bull, 9 calves, 13 working bullocks, 14 pigs, 200 head poultry .....	175	15	0
Working plant—consisting of engine and saw-mill (cost as informed), boiler (now away being repaired), 4 drays (harness for each), 2 spring carts, bullock waggon, ploughs, harrows, rollers, scarifier, stump extractor, chaff-cutter, &c.	420	0	0
	<u>£5,991</u>	<u>14</u>	<u>0</u>

1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

## TRADE UNIONS ACT, 1881.

(REPORT OF THE REGISTRAR OF FRIENDLY SOCIETIES AND TRADE UNIONS FOR THE YEAR 1895.)

Presented to Parliament, pursuant to Act 45 Vic. No. 12, sec. 26.

Printed under No. 19 Report from Printing Committee, 24 September, 1896.

The Registrar of Friendly Societies and Trade Unions to The Chief Secretary.

Office of Registrar of Friendly Societies and Trade Unions,  
Sydney, 15 September, 1896.

Sir,

I have the honor to lay before you for presentation to Parliament in terms of the Trade Union Act of 1881 (45 Victoria No. 12) a report with respect to matters dealt with in connection with Trade Unions for the year 1895.

Two new unions only were registered during the year, the "Eight Hour Demonstration Committee of 1895," and the "Sydney and Suburbs Master Butchers' Association."

Considering the large number (161) of Trade Unions registered since the Act came into force, it may appear remarkable that so few annual returns have been received. It is probable, however, that owing to the depression which has existed for some years, many Unions have ceased to exist, while others are in such a low condition, both as to membership and funds, that they are unwilling to give any information as to their affairs.

Amendments of existing rules were registered by the following Societies:—

- New South Wales Operative Bakers' Association.
- New South Wales Locomotive Engine-drivers, Firemen, and Cleaners' Association.
- Masters and Engineers of Harbour and River Steamers Association.
- New South Wales Furniture Trade Society.
- Builders and Contractors' Association.
- New South Wales Typographical Association.

Although no special provision is made in the Act for the registration of trustees, yet notifications of their appointment were received from several Societies, and have been placed among the records of this office. These trustees, it may be noted, are the legal representatives of their respective unions, and in them is vested all real and personal estate, with power to bring or defend any actions concerning the property of their Associations, and with other privileges which would not be granted to trustees of unregistered bodies, one of them being that a trustee is not personally liable for any deficiency in the funds, but only for such moneys as he may himself have received.

In return for these advantages the Act requires certain conditions to be fulfilled, which have hitherto been almost entirely neglected, and as this default has probably arisen from ignorance of the duties of officers of Trade Unions, the following sections of the Trade Unions Act of 1881 are given in full:—

Sec. 17.—Every trade union registered under this Act shall have a registered office to which all communications and notices may be addressed. If any trade union under this Act is in operation for seven days without having such an office such trade union and every officer thereof shall incur a penalty not exceeding five pounds for every day during which it is so in operation. Notice of the situation of such registered office and of any change therein shall be given to the Registrar and recorded by him. Until such notice is given the trade union shall not be deemed to have complied with the provisions of this Act.

Sec. 18.—A general statement of the receipts, funds, effects, and expenditure of every trade union registered under this Act shall be transmitted to the Registrar before the first day of June in every year, and shall show fully the assets and liabilities at the date and the receipts and expenditure during the year preceding the date to which it is made out of the trade union, and shall show separately the expenditure in respect of the several objects of the trade union, and shall be prepared and made out up to such date in such form, and shall comprise such particulars as the Registrar may from time to time require, and every member of and depositor in any such trade union shall be entitled to receive on application to the treasurer or secretary of that trade union a copy of such general statement without making any payment for the same. Together with such general statement there shall be sent to the Registrar a copy of all alterations of rules and new rules, changes of officers made by the trade union during the year preceding the date up to which the general statement

statement is made out, and a copy of the rules of the trade union as they exist at that date. Every trade union which fails to comply with or acts in contravention of this section and also every officer of the trade union so failing shall each be liable to a penalty not exceeding five pounds for each offence. Every person who wilfully makes or orders to be made any false entry in or any omission from any such general statement, or in or from the return of such copies of rules or alterations of rules, shall be liable to a penalty not exceeding fifty pounds for each offence.

Sec. 25.—A trade union which fails to give any notice or send any document which it is required by this Act to give or send, and every officer or other person bound by the rules thereof to give or send the same, or if there be no such officer then every member of the committee of management of the union unless proved to have been ignorant of, or to have attempted to prevent the omission to give or send the same, is liable to a penalty of not less than one pound and not more than five pounds recoverable at the suit of the Registrar or of any person aggrieved, and to an additional penalty of the like amount for each week during which the omission continues.

Two appendices are attached, one (A) containing the names of all the Trade Unions registered in New South Wales prior to 1st January, 1896, and the other (B) such particulars as have been supplied by seventeen unions, which have furnished information with regard to their operations during the year 1895.

I have, &c.,  
ALFRED DAVIS,  
Registrar of Friendly Societies and Trade Unions.

## APPENDIX A.

Record No.	Trade Unions Registered up to December, 1895.	Date of Registration.
1	Amalgamated Miners' Association of Australasia, Hunter River District .....	1882.
2	New South Wales Typographical Association.....	2 June.
3	New South Wales Seamen's Union .....	15 "
4	Newcastle and Hunter River Shipwrights' Provident Union .....	20 July.
5	Masters and Engineers of Harbours and Rivers Steamers Association .....	26 "
6	New South Wales Operative Bakers' Association .....	18 August.
7	Amalgamated Journeymen Tailors' Association of New South Wales .....	25 "
8	Sydney United Plasterers' Society.....	3 October.
9	Sydney Coal Lumpers' Union.....	9 "
10	Newcastle Coal Trimmers' Provident Union .....	14 November.
		25 "
		1883.
11	Sydney Wharf Labourers' Union .....	10 January.
12	Amalgamated Society of Carpenters and Joiners .....	24 "
13	United Labourers' Protective Society of New South Wales .....	1 February.
14	Friendly Trade Society of Ironmoulders of New South Wales .....	14 "
15	Amalgamated Society of Plumbers, Galvanized Iron Workers, and Gasfitters of New South Wales .....	26 "
16	*Hunter River Mechanics' and Enginemen's Society.....	26 May.
17	Operative Bricklayers' Society of New South Wales.....	26 July.
18	New South Wales Associated Labourers' Union.....	2 August.
19	Bulli Coal Miners' Mutual Protective Association .....	1 October.
20	New South Wales Journeyman Farriers' Association .....	22 November.
21	Newcastle General Wharf Labourers' Association.....	4 December.
22	Journeyman Butchers' Protective Association of New South Wales .....	19 "
		1884.
23	Friendly Society of Operative Stonemasons.....	10 March.
24	Stewards' and Cooks' Union of Australasia .....	15 April.
25	New South Wales Locomotive Engine Drivers' and Firemen's Association .....	17 May.
26	Federated Seamen's Union of New South Wales .....	27 November.
27	Sydney and Suburban Cabmen's Protective Union .....	27 December.
28	†New South Wales Amalgamated Operative Boot Trade Union.....	23 "
		1885.
29	Sydney Progressive Society of Carpenters and Joiners .....	22 February.
30	Sydney United Friendly Trade and Benefit Society of Painters .....	21 "
31	Australasian Pattern Makers' Society .....	1 June.
32	Gas Stokers' Protective Association of New South Wales .....	28 July.
33	Northern Branch of the New South Wales Typographical Association.....	5 August.
34	(No Union was registered to this number.)	
35	New South Wales Tramway Engine Drivers and Firemen's Association .....	25 September.
36	Amalgamated Cooks', Pastry-Cooks', and Confectioners' Society .....	4 November.
37	Pressers' Eight-hour Society of New South Wales .....	12 "
38	Amalgamated Miners' Association of Australasia, Illawarra District, No. 6 Colonial District, New South Wales.	30 December.
		1886.
39	*New South Wales Saddle, Harness, and Collar Makers' Protective Society .....	9 January.
40	Operative Sailmakers' Trade and Burial Society of Sydney.....	25 "
41	Brickmakers', Brickmakers' Labourers' and Pipemakers' Union .....	10 April.
42	Coal Miners' Mutual Protective Association of the Western District .....	1 May.
43	Sawyers' and Millworkers' Association of Sydney.....	18 June.
44	*United Furniture Trade Society of New South Wales .....	28 "
45	Master Slaters' Association of New South Wales .....	12 July.
46	Eight Hour Demonstration Committee, 1886 .....	3 August.
47	New South Wales Amalgamated Railway and Tramway Service Association.....	14 "
48	Newcastle Eight Hour Demonstration Committee, 1886 .....	9 September.
49	Waiters' and Barmen's Union of New South Wales .....	15 November.
50	Colliery Workmen's Mutual Protection Association .....	7 December.
		1887.
51	Australasian Association of Operative Plasterers, New South Wales .....	24 January.
52	Slip and Dock and General Labourers' Union.....	12 April.
53	†Slip and Dock and General Labourers' Union, Balmain Branch .....	5 "
54	Council of the Federated Societies engaged in the Building Trades of N.S.W. ....	1 June.
55	Eight Hour Demonstration Committee, 1887 .....	23 July.
56	Sydney Lithographic Society .....	30 "
57	Port Jackson Coal Labourers' Union.....	24 August.
58	‡Steamship Owners' Association.....	3 September.

\* Dissolved in accordance with the "Trade Union Act, 1881." † Stated to be defunct. ‡ Withdrawn from registration.

Record No.	Trade Unions Registered up to December, 1895.	Date of Registration.
		1888.
59	* Newcastle Harbours and Rivers Employees' Provident Union.....	11 January.
60	New South Wales Fishermen's Association.....	14 February.
61	Newcastle Wharf Labourers' Union.....	30 April.
62	Shipwrights' Provident Union of Port Jackson.....	5 June.
63	Eight-Hour Demonstration Committee, 1888.....	13 July.
64	Sydney Trolley and Draymen's Union.....	22 August.
65	Protection of Trade Marks and Exchange Association (Limited).....	17 September.
66	United Furniture Trade Society of New South Wales.....	15 October.
67	Northern District Eight Hours Demonstration Committee, 1888.....	16 "
68	Newcastle Typographical Association.....	18 "
69	Barrier Typographical Society.....	5 November.
70	United General Labourers' Association of Newcastle.....	26 "
		1889.
71	City of Sydney Wicker-workers' Society.....	12 February.
72	United Society of Boiler-makers and Iron Shipbuilders of New South Wales.....	28 March.
73	United Licensed Victuallers' Association of New South Wales.....	5 April.
74	Bookbinders' and Paper-rulers' Society of New South Wales.....	27 June.
75	New South Wales Harbours and Rivers Service Association.....	10 July.
76	Eight-Hour Demonstration Committee, 1889.....	19 "
77	Newcastle Cranc Employees' Association.....	29 "
78	United Labourers' Protective Society, Newcastle Branch, No. 1.....	2 August.
79	Mercantile Marine Officers' Association of Australasia.....	19 October.
80	New South Wales Amalgamated Boot Trade Union.....	2 November.
81	New South Wales Journeymen Confectioners' Society.....	7 December.
82	New South Wales Shop Employees' Union.....	23 "
83	Amalgamated Slaughtermen and Journeymen Butchers' Union of New South Wales.....	30 "
		1890.
84	Trades and Labour Council of New South Wales.....	6 January.
85	New South Wales Colliery Engine-drivers' Protective Association.....	9 "
86	Australian Commissionaires' Guarantee Society.....	23 "
87	Cutters' and Trimmers' Union of New South Wales.....	5 February.
88	Quarrymen's Eight Hours Protective Society of New South Wales.....	25 "
89	† Balranald Carriers' Union.....	28 "
90	Australasian Society of Engineers.....	2 April.
91	Barrier Ranges Smelters' Concentrators' and Surface Hands' Union and Consolidated Accident Fund.....	2 "
92	† Hunter River District Smelters' and Employees' Union.....	3 "
93	Amalgamated Coach makers', Railway Car and Waggon makers and Wheelwrights' Society of New South Wales.....	30 "
94	* Lachlan Carriers' Union.....	7 May.
95	Australian Fishermen's Benefit and Protective Society of New South Wales.....	16 "
96	Operative Masons' and Bricklayers' Association, Sturt District.....	28 "
97	Newcastle and County Shop Employees' Union.....	11 June.
98	Amalgamated Hotel and Caterers' Employees Mutual Benefit Association of New South Wales.....	17 "
99	Coastal Seamen's Union of New South Wales.....	17 "
100	Iron Workers' Assistants' Association of New South Wales.....	20 "
101	Eight Hour Demonstration Committee, 1890.....	16 July.
102	Bathurst District Federated Labour League.....	22 "
103	Bogan River Carriers' Union Forwarding Agency Society.....	2 August.
104	Sydney and Suburban Omnibus Employees' Association.....	4 "
105	New South Wales Practical Chimney Sweepers' Association.....	11 "
106	Barrier Ranges Engine Drivers' and Firemen's Association, New South Wales.....	21 "
107	Brewers' Employees' Association.....	21 "
108	United Shipwrights' Society of Port Jackson.....	9 September.
109	Amalgamated Navvies' and General Labourer's Union of New South Wales.....	11 October.
110	* Aerated Water, Cordial and Gingerbeer Employees Union.....	20 "
111	Newcastle and District Farriers' Association.....	27 "
112	Licensed Vanmen's Union.....	31 "
113	Newcastle District Operative Bakers' Association.....	31 "
114	North Sydney Branch, Amalgamated Navvies and General Labourers' Union of New South Wales.....	8 November.
115	Master Carriers' Association of New South Wales.....	28 "
116	Northumberland Carriers' Association of New South Wales.....	28 "
117	Kiama Branch, Amalgamated Navvies' and General Labourers' Union of New South Wales.....	11 December.
118	Hartley Vale Shale and Coal Miners' Mutual Protective Lodge of the Western District.....	13 "
119	Silverton Tramway Employees' Association.....	19 "
120	New South Wales Letterpress Machinists' and Stereotypers' Union.....	18 "
121	United Millers', Engine Drivers', and Mill Employees' Society of New South Wales.....	20 "
		1891.
122	* New South Wales Sawmill and Timber Yard Employees' Association.....	23 January.
123	† The Pastoralists' Union.....	18 February.
124	Journeymen Coopers' Society of New South Wales.....	15 "
125	Barrier Ranges Builders' Labourers' Society.....	27 "
126	Wool and Leather Workers' Association of New South Wales.....	11 March.
127	* New South Wales Saddle and Harness Makers' Trade Society.....	16 "
128	Port Jackson Stevedores' Association.....	17 "
129	Barrier Ranges Mechanics' and Mechanics' Assistants' Association.....	10 April.
130	Textile Workers' Union of New South Wales.....	14 May.
131	Clothing Machinists' and Fitters' Union of New South Wales.....	15 "
132	Western District Smelters' and Surface Employees' Union.....	12 June.
133	Northern District Eight-Hours Demonstration Committee, 1891.....	18 "
134	North Coast Trades and General Labour Union.....	14 July.
135	Newcastle Brewery Employees' Association.....	29 "
136	Eight-Hour Demonstration Committee, 1891.....	7 August.
137	Brickmakers' and Brickyard Employees' Society of Broken Hill.....	6 "
138	Amalgamated Tobacco Workers' Society.....	15 "
139	Northern District Sawyers' and Machinists' and Timber Employees' Association.....	25 September.
140	Association of Graphic Arts.....	9 October.
141	Newtown Branch, United Labourers' Protective Society of New South Wales.....	25 November.
142	† Sydney and Suburbs United Bread Carters' Association.....	10 December.

\* Dissolved in accordance with the "Trade Union Act, 1881."

† Stated to be defunct.

‡ Withdrawn from registration.

Record No.	Trade Unions Registered up to December, 1895.	Date of Registration.
		1892.
143	Builder's and Contractors' Association of New South Wales .....	17 May.
144	United Marble, Monumental, and Slate Workers' Society .....	21 "
145	United Cooks' Society of New South Wales .....	11 June.
146	Eight-Hour Demonstration Committee, 1892 .....	27 July.
147	New South Wales Sewerage Miners' Association .....	27 "
148	Central Australian Carriers' Union .....	30 May.
149	New South Wales Marine Association of Stewards and Cooks .....	1 September.
150	Barrier Ranges Operative Bakers' Union .....	3 "
151	Timber Cutters' Association of New South Wales.....	28 "
		1893.
152	Amalgamated Society of Engineers, New South Wales District.....	19 June.
153	Eight-Hour Demonstration Committee, 1893 .....	18 August.
154	Amalgamated Miners' Association of Australasia, Barrier Colonial District No. 3.....	25 "
155	Northern District Eight-Hours Demonstration Committee, 1893 .....	25 "
155A	Thackeringa Branch, Amalgamated Miners' Association and Consolidated Accident Fund .....	30 October.
156	Peak Hill Branch, Barrier Colonial District No. 3, Amalgamated Miners' Association of Australasia and Consolidated Accident Fund .....	11 December.
		1894.
157	Barrier Mines Employers' and Employees' Amalgamated Union .....	9 February.
158	Eight-Hour Demonstration Committee, 1894 .....	11 August.
159	Sydney District Council of the Australasian Labour Federation .....	27 September.
		1895.
160	Eight-Hour Demonstration Committee, 1895 .....	16 August.
161	Sydney and Suburbs Master Butchers' Association, Sydney, New South Wales .....	8 November.

## APPENDIX B.

Record No.	Name of Trade Union.	Amount of Funds, 31st December, 1894.	Receipts, 1895.	Expenditure, 1895.	Amount of Funds, 31st December, 1895.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.
1	Amalgamated Miners' Association—Hunter River District	2,120 14 11	2,362 2 10	3,725 5 6	817 12 3
5	Masters' and Engineers' of Harbour and River Steamers Association of N.S.W.	929 2 1	313 1 4	343 15 0	898 8 5
25	N.S.W. Locomotive Engine Drivers', Firemen, and Cleaners' Association.....	1,469 11 9	654 9 4	557 3 8	1,566 17 5
29	Sydney Progressive Society of Carpenters and Joiners .....	265 10 3	38 7 6	62 0 1	241 18 3
32	Gas Stokers' Protective Association of New South Wales (half-year) .....	3 18 3	26 10 6	21 17 8	8 11 1
40	Operative Sailmakers' Trade and Burial Society of Sydney .....	151 9 4	20 13 4	6 0 6	166 2 2
47	N.S.W. Amalgamated Railway and Tramway Service Association .....	266 15 11	357 16 9	84 11 2	570 1 6
65	Protection of Trade Marks and Exchange Association (Limited) .....	5 1 7	59 14 10	68 6 4	.....
68	Newcastle Typographical Association .....	94 12 5	67 3 3	56 17 2	104 18 6
72	United Society of Boilermakers and Iron Ship-builders of New South Wales .....	2,199 8 10	474 6 1	217 14 10	2,456 0 1
85	New South Wales Protective Association of Colliery Engine Drivers .....	7 16 3½	64 13 2	49 8 0	23 1 5½
90	Australasian Society of Engineers .....	331 9 7	120 4 11	50 3 6	401 11 0
95	Australian Fishermen's Benefit and Protective Society of New South Wales .....	109 11 9	38 2 0	41 6 6	106 7 3
98	Amalgamated Hotel and Caterers Employees' Union in New South Wales .....	98 13 4	113 0 5	91 18 1	119 15 8
106	Barrier Ranges Engine Drivers' and Firemen's Association .....	5 17 1	37 16 6	30 3 4	13 10 3
124	Journeymen Coopers' Society of New South Wales.....	281 0 6	148 6 1	128 15 0½	300 11 6½
154	Amalgamated Miners' Association of Australasia—Barrier, Colonial District, No. 3 .....	.....	.....	.....	235 13 4

Sydney: Charles Potter, Government Printer.—1896.

[3d.]

1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

FRIENDLY SOCIETIES.

REGISTRAR'S REPORT ON OPERATION OF, FOR YEAR 1895.)

*Printed under No. 27 Report from Printing Committee, 13 November, 1896, a.m.*

Presented to Parliament, pursuant to Act 37 Vic. No. 4, Sec. 45.

The Registrar of Friendly Societies to The Chief Secretary.

Sir,

Sydney, 12 November, 1896.

I have the honor to forward herewith my report for the year 1895, to which are appended tables compiled from the annual returns of Friendly Societies, and exhibiting their position at the close of the year 1894.

I have, &c.,

ALFRED DAVIS,

Registrar of Friendly Societies.

In a previous report reference was made by the Registrar to the general inadequacy of the contributions required from members of Friendly Societies to provide the benefits offered under their rules, and also to the unsoundness of the system of uniform payments to the sick and funeral funds.

Any proposal to alter the existing undesirable condition of affairs met with vigorous opposition from the majority of the officers of the various bodies, who were inclined to resent interference, and doubtless feared that a change would be productive of extra trouble in the performance of their duties. There were others, however, who were already aware of the faulty nature of the system then in vogue, and willing to exert their influence to bring about an amendment, and great improvements have since been made. Some of the most bitter opponents became converted into strong supporters, and although, chiefly through the efforts of the older members, in most cases but moderate increases have been made in the subscriptions of persons who had already been initiated as members, nearly all the societies have registered rules requiring much higher contributions from new members.

In the case of one of the most important orders of Oddfellows, known as the Manchester Unity, of which the districts and branch lodges varied very considerably in the value of the benefits which they offered, a most decisive step was taken. They have now a code of rules binding upon every branch of the society in New South Wales and providing for uniformity of benefits to be received from, and of contributions to, the sick and funeral funds, with the proviso that every member initiated since 1st October, 1894, shall subscribe according to an adequate scale graduated by age groups.

The Independent Order of Rechabites had already employed a graduated, although not quite adequate scale, and have now adopted one which has been certified to as satisfactory, and which applies to all new members. The same course has been followed by the Grand United Order of Oddfellows, the Independent Order of Oddfellows, the Order of Royal Foresters, the Sons and Daughters of Temperance, the Loyal Protestant Benefit Society, the Protestant Alliance Friendly Society, and the Free Gardeners. The A.H.C. Guild of St. Mary and St. Joseph (completely remodelled as an Order with branches), the Irish National Foresters, and the National Independent Order of Oddfellows have adopted an approved scale for all members alike. The remaining orders still continue to offer to the unwary a scale of sick and funeral benefits which the present weekly contribution is wholly inadequate to provide, and young men now joining them will, when too late, discover that the whole of their payments have been absorbed for the benefit of the old members.

One element which led to the improvement was the knowledge that the lodge funds were being rapidly exhausted owing to the increased demand for sick allowance, due to the recent bad times and lack of employment. Many members have been compelled to claim sick pay who, under better circumstances, would have declined to accept it, and it is freely stated that men in sound health, but out of work, have contrived to have their names placed on the sick list.

A very considerable amount of work has been entailed upon the office of the Registrar not only in the examination and revision of rules submitted for registration, the preparation of tables of contributions suitable to the varied scales of benefits proposed by the different societies, and the giving decisions in the numerous cases of disputes brought before the Registrar, but still more in the adjustment and correction of the annual returns required under section 45 of the Act. The discrepancies between the balance-sheets of branches of the orders and those of the Districts and Grand Lodges have been subjected to careful investigation, and the further inquiries were pushed the more clearly was it demonstrated that embezzlements and misapplication of the funds had been of far from exceptional occurrence.

The chief causes of this unsatisfactory condition of affairs have been the unfitness of secretaries, due to their ignorance, and the utter neglect of the auditors to observe the faithful fulfilment of their duties.

In the rules of some societies it is provided that if an office become vacant, and there be no duly nominated candidate, the roll of members shall be called over, and each member in turn refusing to accept the office shall be fined,—as if the fact of having been initiated has conferred upon each member the capability of properly performing the duties of secretary or auditor; and in this connection it has been stated that one on his appointment stated that he had never at any period of his life been required to add up a column of figures.

The errors into which secretaries have fallen are of various kinds. In one case great care was observed in entering in each member's pence book the amount which he paid on each lodge night, but no list was kept of the names of those from whom the money was received. A simple memorandum was made in the lodge books of the total amount collected, and handed over to the treasurer at the close of the meeting; so that no book is in existence to show what members are in arrears, nor to what extent. In another case, a refund to the society on account of over-payment from its funds was omitted from the receipts, although the gross amount paid away was inserted among the items of expenditure.

Some other vagaries in the way of account-keeping may be noted, which are somewhat remarkable. Moneys embezzled years ago, and amounts invested in bubble banks and in building societies which have long since closed their doors, and from which not a farthing can ever be realised, are still regarded as valuable assets, and scrupulously carried forward from year to year. Investments realised and amounts withdrawn from banks have in several instances been treated as a portion of the annual receipts; and in like manner sums invested have been taken as part of the annual expenditure. Amounts spent on repairs to a building or in replacing worn-out furniture have been added to the original cost, thus giving an unduly increased value to the society's assets. Bank overdrafts have occasionally been regarded as available assets, and appear to have been looked upon as a decidedly profitable investment. Deficiencies in the management fund at the end of a year, and sums of money, in many cases by no means inconsiderable, borrowed, illegally, from the sick and funeral fund, have been quietly ignored in the next year's returns, although the rules forbid such borrowing, and provide that, if necessary, a levy shall be made for management purposes. If the income for the year has been less than the expenditure, it is not an uncommon occurrence that the secretary adds the amount of the excess of expenditure to the amount of funds at the beginning of the year, so as to arrive at the funds at the end of the year, and then, by way of clinching the matter and providing a check on his calculations, to give detailed particulars as to bank deposits and other ways in which these total amounts are invested.

Strange as some of the above-mentioned blunders appear, it must be noted that the balance-sheets have not been challenged by any private or official member, and they have, of course, been passed and certified by the auditors.

Despite the distinct provision in the 40th section of the Act that a separate account shall be kept of the contributions and expenses in connection with management, many societies continue to keep one general fund for all purposes. As this is illegal the chief executive officers should at once take steps to remedy the evil, and have the contributions in future properly divided; and they should at the same time impress upon each secretary the necessity of ensuring accuracy in their returns of the number of members, financial and unfinancial. The numbers returned to this office frequently differ materially from those supplied to the District or Grand Lodge.

Unfortunately, certain causes have militated against improvement in these respects—the resentment felt by branch officers when any suggestions are made by their superiors, and the hesitation on the part of District or Grand Secretaries, elected from year to year, to find fault with those upon whose goodwill they depend for reappointment.

Every society established under the Act is required by section 28 to appoint one or more trustees, in whom all real and personal estate of the society shall be vested (section 33). The extent to which this provision has been neglected is surprising. From one or two cases which were brought under notice it was deemed expedient to make an investigation of the records of 605 existing registered Friendly Societies. Of these, 392 had the correct number of trustees as required under their rules, 31 had less than the required number, 37 had sent in notices of appointment which were informal, while 145 societies, some of which had been in existence for upwards of thirty years, had never registered even one trustee, and of those which had registered the correct number, it has since been found that many had made new appointments without registration.

Periodical valuations of the societies are necessary, as being the only means by which they can perceive plainly their position; but the only valuations which have as yet been made are those of the Manchester Unity, of the Grand United Order of Oddfellows, and of the Rechabites. The last-named society has not published the result, which cannot, therefore, be given here; but the condition of the two first-named was as follows:—

Name of Order.	Number of Members.	Average Age (in years).	Number of Wives.	Assets.	Liabilities.	Deficiency per Member.	Ratio of Assets per £ of Liability.
Manchester Unity I.O.O.F. ....	17,656	34½	11,271	£ 720,529	£ 924,798	£ s. d. 11 11 7	£ s. d. 0 15 7
Grand United O.O.F. ....	8,888	34	3,943	281,970	403,055	13 0 9	0 14 10

For the sake of convenience and comparison, the following abstracts of the returns for the years 1893 and 1894 have been compiled:—

SOCIETIES

SOCIETIES Tabulated for the Year 1893.

Name of Order,	Contributions.	Other Receipts.	Total.	Sick Pay.	Medical Attendance and Medicine.	Other Expenditure.	Total.	Funds at the beginning of Year.	Funds at the end of Year.	Number of Financial Members at beginning of Year 1893.	Number of Financial Members at end of 1893.	Numbers of Members sick during 1893.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.			
Australasian Holy Catholic Guild.....	4,478 2 2	1,009 16 4	5,487 18 6	2,065 15 1	1,979 9 3	1,905 17 7	5,951 1 11	13,889 0 3	13,425 16 10	1,699	1,705	...
Ancient Order of Foresters, Sydney District	10,977 13 3	2,149 3 3	13,126 16 6	2,895 4 11	3,958 7 2	5,270 19 4	12,114 11 5	19,439 19 10	20,452 4 11	3,392	3,432	596
Ancient Order of Foresters, New England District.	307 13 5	26 10 7	334 4 0	60 14 6	75 12 6	149 11 7	285 18 7	170 2 2	218 7 7	109	130	20
Grand United Order of Oddfellows .....	30,125 10 1	6,102 18 0	36,228 8 1	10,016 17 6	9,699 6 8	14,859 16 8	34,576 0 10	69,796 19 1	71,449 6 4	10,203	9,566	2,097
Grand United Order of Free Gardeners ...	4,998 15 6	553 8 9	5,552 4 3	2,040 4 10	1,046 17 11	2,453 12 1	5,540 14 10	3,583 8 7	3,596 18 0	1,975	1,920	...
Hibernian Australasian Catholic Benefit Society.	6,817 6 11	913 10 3	7,730 17 2	1,864 6 8	2,460 11 6	3,328 19 11	7,653 17 1	7,762 8 6	7,839 8 7	1,753	1,634	342
Irish National Foresters .....	781 6 0	64 2 1	845 8 1	50 3 4	223 18 8	313 19 3	588 1 3	236 18 3	514 5 1	183	178	17
Independent Order of Oddfellows.....	17,384 19 4	3,834 11 0	20,719 10 4	4,060 16 9	5,696 10 10	8,167 19 7	17,925 7 2	29,442 6 7	32,236 9 9	4,827	4,584	...
Independent Order of Rechabites .....	7,403 14 5	1,040 8 6	8,441 2 11	803 5 2	1,272 4 1	5,562 19 0	7,633 8 3	6,257 1 7	7,059 16 3	1,162	1,313	217
Loyal Protestant Benefit Society .....	2,619 19 4	138 7 11	2,758 7 3	578 12 11	916 1 4	1,012 5 10	2,507 0 1	2,400 2 11	2,551 10 11	914	852	162
Manchester Unity, Independent Order of Oddfellows	61,280 6 6	17,734 0 5	79,014 6 11	17,560 18 10	19,079 10 3	33,574 17 11	70,215 7 0	199,529 9 10	208,328 9 9	17,590	17,656	3,139
National Independent Order of Oddfellows	894 13 11	107 17 10	1,002 11 9	111 3 4	257 8 3	380 18 6	749 10 1	91 11 4	344 13 0	184	274	36
Order of Royal Foresters.....	6,493 1 0	1,282 17 10	7,775 18 10	1,773 5 11	2,332 1 0	3,276 3 11	7,331 10 10	23,141 17 3	23,536 5 3	1,830	1,835	...
Protestant Alliance Friendly Society of Australasia.	19,247 1 3	3,016 3 5	22,263 4 8	4,915 18 5	7,182 11 0	7,916 14 6	20,015 3 11	39,899 12 7	42,147 13 4	5,871	5,665	973
Sons and Daughters of Temperance .....	6,799 18 4	1,030 10 11	7,830 9 3	1,799 0 3	2,583 1 8	3,854 12 4	8,236 14 3	15,582 18 8	15,176 13 8	3,868	3,714	...
United Ancient Order of Druids, Sydney District.	15,494 17 10	2,876 19 2	18,371 17 0	3,303 3 2	7,210 15 3	6,182 14 8	16,696 13 1	13,984 13 11	15,659 17 10	4,997	4,992	...
United Ancient Order of Druids, Newcastle District.	2,723 19 0	372 2 8	3,096 1 8	1,236 5 2	334 7 4	1,158 11 0	2,729 3 6	8,276 2 1	8,643 0 3	1,082	989	276
Total .....	198,825 18 3	41,753 8 11	240,579 7 2	55,125 15 9	66,308 14 8	99,370 13 8	220,805 3 3	458,406 13 5	478,290 17 4	61,644	60,389	..
Miscellaneous Societies .....	4,753 8 11	1,202 15 0	5,961 3 11	2,217 2 8	1,403 12 2	2,277 9 10	5,903 4 8	13,423 3 2	13,436 2 5	3,143	2,656	...

FRIENDLY Societies Tabulated for the Year 1894.

Name of Order.	Contributions.	Other Receipts.	Total.	Sick Pay.	Medical Attendance and Medicine.	Other Expenditure.	Total.	Funds at the beginning of Year.	Funds at the end of Year.	Number of Financial Members at the beginning of Year.	Number of Financial Members at the end of Year.	Number of Members Sick during Year.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.			
Australasian Holy Catholic Guild.....	4,827 5 8	870 19 4	5,698 5 0	1,810 16 10	1,884 8 3	2,166 18 3	5,862 3 4	15,240 18 9	15,077 0 5	1,985	1,631	...
Ancient Order of Foresters, Sydney District	10,590 16 10	1,832 19 2	12,423 16 0	3,175 3 7	3,659 12 10	4,701 15 3	11,586 11 8	19,871 7 1	20,758 11 5	3,432	3,249	590
Ancient Order of Foresters, New England District.	524 0 1	32 0 0	556 0 1	80 1 3	100 2 0	256 19 2	437 2 5	41 12 9	160 10 5	162	136	21
Ancient Order of Foresters, Neutral Courts	2,783 15 9	549 6 8	3,333 2 5	1,357 15 5	1,142 9 1	886 1 11	3,386 6 5	9,245 1 7	9,191 17 7	980	910	207
Grand United Order of Oddfellows .....	30,099 7 11	5,789 3 11	35,888 11 10	10,785 11 1	8,898 8 10	15,294 12 9	34,978 12 5	71,347 8 10	72,257 8 0	9,519	9,586	2,205
Grand United Order of Free Gardeners ...	4,577 14 2	425 9 10	5,003 4 0	2,026 6 1	923 2 8	2,241 18 2	5,191 6 11	3,224 9 7	3,036 6 8	1,588	1,572	439
Hibernian Australasian Catholic Benefit Society.	5,931 17 1	953 10 2	6,885 7 3	1,904 5 0	2,077 6 2	2,485 4 3	6,466 15 5	7,561 16 8	7,980 8 6	1,627	1,536	297
Irish National Foresters .....	825 2 11	64 3 5	889 6 4	34 3 4	231 11 5	424 7 8	690 2 5	546 3 8	745 7 7	178	195	15
Independent Order of Oddfellows .....	16,709 19 7	3,016 13 3	19,726 12 10	4,134 15 8	5,309 5 6	8,034 6 9	17,478 7 11	32,236 9 9	34,484 14 8	4,631	4,406	867
Independent Order of Rechabites.....	4,668 1 6	1,484 5 9	6,152 7 3	1,031 11 8	1,302 6 0	2,905 7 4	5,239 5 0	6,841 17 6	7,754 19 9	1,313	1,373	242
Loyal Protestant Benefit Society .....	2,331 2 2	155 12 6	2,486 14 8	534 5 8	744 16 5	974 13 11	2,253 16 0	2,561 12 6	2,794 11 2	852	866	160
Manchester Unity, Independent Order of Oddfellows.	62,250 8 3	16,618 14 9	78,869 3 0	20,177 15 6	19,385 1 10	34,890 11 11	74,413 9 3	208,133 12 11	212,564 6 8	17,579	17,447	3,687
National Independent Order of Oddfellows	1,107 12 6	119 14 5	1,227 6 11	159 6 8	424 10 5	413 6 7	997 3 8	348 13 2	578 16 5	284	309	46
Order of Royal Foresters .....	6,461 16 2	1,184 16 3	7,645 12 5	1,963 3 0	2,243 8 10	3,699 10 7	7,909 2 5	28,536 5 3	28,273 15 3	1,885	1,757	256
Protestant Alliance Friendly Society of Australasia.	19,391 15 3	2,936 16 9	22,328 12 0	5,190 17 2	6,950 6 4	8,139 6 8	20,280 10 2	41,979 15 11	44,027 17 9	5,665	5,519	1,020
Sons and Daughters of Temperance .....	4,883 3 8	826 6 4	5,709 10 0	1,449 8 0	1,517 16 0	3,067 10 4	6,034 14 4	9,338 10 10	9,013 15 6	†3,840	†2,975	532
United Ancient Order of Druids, Sydney District.	15,346 4 2	2,553 0 11	17,899 5 1	3,669 6 0	7,017 7 6	5,809 14 9	16,496 8 3	15,433 8 7	16,836 5 5	4,967	4,985	608
United Ancient Order of Druids, Newcastle District.	2,640 5 6	366 14 6	3,007 0 0	1,581 9 9	352 8 6	1,355 4 11	3,289 3 2	8,764 18 4	8,482 15 2	1,041	1,027	354
Miscellaneous Societies .....	4,424 6 4	1,407 6 3	5,831 12 7	1,993 2 0	1,273 1 3	2,260 17 4	5,527 0 7	11,762 17 10	12,067 9 10	2,470	2,716	...
	200,374 15 6	41,187 14 2	241,562 9 8	63,062 3 8	65,437 9 10	99,998 8 6	228,498 2 0	493,022 10 6	506,086 18 2	63,998	62,225	11,546
*Sons of Temperance .....	2,106 5 7	463 8 11	2,569 14 6	939 7 2	893 7 1	824 1 4	2,656 15 7	7,289 5 11	7,202 4 10	...	...	...
*Daughters of Temperance .....	792 6 9	191 16 1	984 2 10	278 8 0	439 5 9	343 5 5	1,060 19 2	1,570 4 10	1,493 8 6	...	...	...
Total.....	203,273 7 10	41,842 19 2	245,116 7 0	64,279 18 10	66,770 2 8	101,165 15 3	232,215 16 9	501,882 1 3	514,782 11 6	63,998	62,225	11,546

\* These returns have been received since the first portion of the table was compiled.

† This is the membership for the whole of the order.

The registrations during the year 1895 are given in Appendix (A), and the tabulated numerical and financial statements of the whole of the Friendly Societies are exhibited in detail in Appendices B\* and C\* respectively.

42, Young-street, Sydney, 12th November, 1896.

ALFRED DAVIS,  
Registrar of Friendly Societies.

APPENDIX A.  
REGISTRATIONS IN 1895.

*Friendly Societies.*

New Societies.....	38
Complete amendments of Rules.....	93
Partial " " .....	22
Dissolutions " " .....	7
Amalgamation .....	1
Change of place of meeting .....	5
Trustees .....	330

*Names of New Societies.*

A.H.C.G.—Medical Institute.	
"    of St Mary and St. Joseph—Paddington Branch.	
"    "    "    St. Augustine's Branch, Balmain.	
"    "    "    Mt. Carmel Branch, Waterloo.	
"    "    "    Randwick Branch.	
"    "    "    St. Benedict's Branch, Sydney.	
"    "    "    Waverley Branch.	
"    "    "    Sacred Heart Branch, Sydney.	
"    "    "    St. Mary's Branch, Sydney.	
"    "    "    St. Joseph's Branch, Woollahra.	
"    "    "    St. Patrick's Branch, Sydney.	
"    "    "    Newtown Branch.	
"    "    "    St. Brigid's Branch, Marrickville.	
"    "    "    St. Gregory Branch, Queanbeyan.	
A.O.F.—Juvenile Court, Foresters' Home.	
"    "    Pride of Australia.	
Catholic Women's Benefit Society—St. Francis' Branch.	
"    "    St. Joseph's Branch.	
G.U.O.O.F.—Guarantee Fund.	
"    Beecroft Branch, No. 3743.	
"    Loyal Ballina Branch, No. 3744.	
"    Rising Star Branch.	
"    Mayflower Branch, No. 34.	
H.A.C.B.S.—St. Joseph's Juvenile Branch, Balmain.	
I.O.O.F.—Waverley Lodge, No. 76.	
"    Westward-Ho Lodge, No. 75.	
N.I.O.F.—Loyal Excelsior Lodge, No. 1148.	
M.U.I.O.O.F.—Loyal Pambula Lodge, No. 184.	
"    Loyal Kildare Lodge, No. 181.	
"    Past Grand's Lodge, No. 1.	
P.A.F.S.—Elliott Lodge, No. 90.	
S. & D.O.T.—Phoenix Division.	
"    Pride of the West Division, No. 70.	
U.A.O.D.—Gwydir Lodge (Neutral).	
Miscellaneous Societies.—Metropolitan Colliery Employees' Accident Fund.	
"    St. George's Friendly Societies' Association and Burial Association	
"    Sydney Clerks' and Warehousemen's Benefit Association.	
"    East Greta Accident Relief Society.	

*Names of Societies Dissolved.*

A.H.C.G.—St. Patrick's, Cooma.
G.U.O.F.G.—Blue Bell, No. 27.
L.P.B.S.—Pride of the North Lodge, No. 16.
M.U.I.O.O.F.—Loyal Star of Clyde Lodge.
S. & D.O.T.—Perseverance Division, No. 124.
"    Glorious Hope of Binda Division, No. 2.
"    Britannia Division.

*Names of Societies Amalgamated.*

N.I.O.F.—Loyal Fidelity Lodge (No. 1147) with Progress Lodge (No. 1141).
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*Building Societies.*

New Societies, 2.
Partial Amendments of Rules, 2.
Trustees, 4.

*Names of New Societies.*

Armistale Mutual Help Benefit Building Society.
No. 1 Cowra Starr-Bowkett Building Society (collapsed before it got into working order).

*Co-operative Societies.*

Complete Amendments of Rules, 1.
Partial Amendments of Rules, 1.

\* Appendices B and C were omitted by the Printing Committee.

Sydney: William Applegate Gullick, Government Printer.—1896.

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1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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**IMMIGRATION.**

(REPORT FOR 1895.)

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*Printed under No. 1 Report from Printing Committee, 21 May, 1896.*

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The Officer-in-Charge of Immigration to The Principal Under Secretary.

Sir,

Immigration Office, Sydney, 11 January, 1896.

I have the honor to submit, for the information of the Chief Secretary, the report on Immigration for the year ending 31st December, 1895.

Operations under the Regulations have been confined to the nominations of wives and families by their husbands and fathers, of good moral and industrial qualifications, being residents in the Colony.

Of the total of thirty-seven immigrants who arrived, all were nominated in the Colony.

They consisted of eighteen individuals above 12 years of age and nineteen under 12 years of age.

No births or deaths occurred during the voyage.

The Appendices herewith annexed give full detailed information relative to Immigration during the past year :—

- A.—General Statistical Information.
- B.—Nationality of Immigrants.
- C.—Religious Persuasions.
- D.—Educational Attainments.
- E.—Distribution into Country Districts.

I have, &c.,

J. A. BRODIE,

Officer-in-Charge of Immigration.

**APPENDIX A.**  
**RETURN of Assisted Immigrants to New South Wales, 1895.**

Name of Vessel.	Date of Departure.	Date of Arrival.	Number of days on voyage.	Number landed.				Nominated in the Colony.	Selected by the Agent-General.	Total number of Individuals landed.	Equal to statute adults.	Contract price per statute adult.	Amount paid for and by Immigrants on account of cost of their passage.	
				Above 12 years of age.		Under 12 years of age.							Amount paid in the Colony by Depositors.	Amount paid in London to the Agent-General.
				M.	F.	M.	F.							
	1894.	1895.										£	£	
S.S. "Cuzco" .....	29 December 1895.	11 February ..	45	...	1	...	1	2	2	1½	£15 per statute adult.	3	.....	
" " "Austral" .....	11 January ...	24 February..	44	...	3	3	1	7	7	4½		9	.....	
" " "Ophir" .....	25 January ...	9 March .....	43	...	2	3	1	6	6	3½		7	.....	
" " "Orizaba" .....	28 February ..	23 March ....	43	...	2	...	...	2	2	2		4	.....	
" " "Orient" .....	7 March .....	19 April .....	43	...	1	...	1	2	2	1½		3	.....	
" " "Orizaba" .....	14 June.....	28 July .....	44	1	4	4	1	10	10	7		16	.....	
" " "Orient" .....	28 June.....	12 August ...	46	...	1	...	...	1	1	1		2	.....	
" " "Orizaba" .....	9 August ...	21 September.	43	1	1	...	2	4	4	2½		7	.....	
" " "Orient" .....	15 November..	30 December..	45	...	1	2	...	3	3	2	4	.....		
			*	2	16	12	7	37	37	25½		55	.....	

\* Average length of passage, 44 days.

Single men .....	2
Wives and single women .....	16
Children under 12 years of age .....	19
<b>Total.....</b>	<b>37</b>

Sydney, 9th January, 1896.

J. A. BRODIE,  
Officer-in-Charge of Immigration.

## 3

## APPENDIX B.

RETURN showing the Native Countries of the Assisted Immigrants who arrived in 1895:—

From England.....	13
„ Scotland .....	10
„ Ireland .....	10
„ Other Countries .....	4

Sydney, 9th January, 1896.

J. A. BRODIE,  
Officer-in-Charge of Immigration.

## APPENDIX C.

## RELIGIOUS PERSUASIONS.

Nationality.	Classification of Religion.						Total.
	Church of England.	Church of Scotland.	Wesleyan Methodists.	Other Protestants.	Roman Catholics	Jews.	
English .....	6	.....	4	.....	3	.....	13
Scotch .....	.....	7	3	.....	.....	.....	10
Irish .....	.....	4	.....	.....	1	5	10
Other Countries .....	.....	.....	.....	.....	.....	4	4
	6	11	7	.....	4	9	37

Sydney, 9th January, 1896.

J. A. BRODIE,  
Officer-in-Charge of Immigration.

## APPENDIX D.

## EDUCATIONAL ATTAINMENTS.

Nationality.	Classification of Education.						Total.
	Under 12 years of age.			12 years and over.			
	Cannot read.	Read and write.	Read only.	Cannot read.	Read and write.	Read only.	
England .....	3	3	.....	.....	7	.....	13
Scotland .....	3	3	.....	.....	4	.....	10
Ireland .....	5	.....	.....	.....	5	.....	10
Other Countries .....	.....	3	.....	1	.....	.....	4
	11	9	.....	1	16	.....	37

Sydney, 9th January, 1896.

J. A. BRODIE,  
Officer-in-Charge of Immigration.

## APPENDIX E.

RETURN showing the Number of Assisted Immigrants who, at their own request, were forwarded to the Country Districts by Rail.

Destination.	Wives.	Children.
Orange .....	1	2
Newcastle.....	1	3
Bourke .....	1	1
	3	6

Sydney, 9th January, 1896.

J. A. BRODIE,  
Officer-in-Charge of Immigration.



1896.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

## ROYAL COMMISSIONS OF INQUIRY.

(RETURN RESPECTING FEES TO MEMBERS, &amp;c.)

*Printed under No. 6 Report from Printing Committee, 25 June, 1896.**[Laid upon the Table of this House in answer to Question No. 6 of 24th June, 1896.]*

## Question.

6. MR. PERRY asked THE COLONIAL SECRETARY,—

- (1.) What Royal Commissions have sat during the last five years?
- (2.) What rate of fees has been allowed to the members of each of such Commissions, and what was the scale of remuneration allowed in each case to the shorthand-writers and secretaries?
- (3.) On which of such Commissions did the members of the Commission, the shorthand-writers, or the secretary charge for two sittings per day, and in how many instances did this occur?
- (4.) What was the total amount paid to each member of such Commission, and the total number of days of sitting, and the like information with respect to the shorthand-writers and the secretaries?
- (5.) Were any instructions given in any of such cases that the *Hansard* staff should supply the officers required, and on what terms?

## Answer.

(1 and 2.)

- Baldwin Engine Commission—President, £10 10s. per sitting; Members, £7 7s. per sitting; Secretary, at the rate of £300 per annum; Shorthand-writer, £2 2s. per sitting, and 1s. per folio for transcription.
- Bayview House—President, nil; 2 members, nil; 1 member, £3 3s. per sitting, from 1 January to 19 March, 1895; Secretary and shorthand-writer, at rate of £400 per annum.
- Battye Inquiry—No fees.
- Casual Labour Board Inquiry—President, £10 10s. per day; Members, £10 10s. per sitting; Secretary, at rate of £300 per annum; Shorthand-writer, £2 2s. per sitting, and 1s. per folio for transcription.
- Chinese Gambling—President and members, £3 3s. per sitting; Secretary and shorthand-writer, £3 3s. per sitting, and 1s. per folio for transcription.
- Coal-mining Bill Inquiry—President, £12 12s. per sitting; Members, £7 7s. per sitting; Secretary and shorthand-writer, £2 2s. per sitting, and 9d. per folio for transcription.
- Dean Inquiry—President, £10 10s. per sitting; 1 member, £7 7s. per sitting; 1 member, £3 13s. 6d. per sitting; Secretaries and shorthand-writers (2), £2 2s. each per sitting, and 1s. per folio for transcription.
- Fisheries Inquiry—Members, no fees; Secretary and shorthand-writer, salary at rate of £400 per annum.
- Gutzeit Inquiry—Commissioner, £10 10s. as fee.
- Johnson Inquiry—Commissioner, fee of £21.
- Kennedy Inquiry—No fees.
- G. D. Hay Inquiry—Members, nil; Shorthand-writer, for services and expenses, £4 15s.
- Dr. Matthews Inquiry—Commissioner, fee of £30.
- Military Service Inquiry—President, £5 5s. per sitting; Members, £3 3s. per sitting; Secretary, at rate of £250 per annum; Shorthand-writer, £3 3s. per sitting, and 1s. per folio for transcription.
- Public Service Inquiry—President, £3 3s. per sitting; 3 members, £2 2s. per sitting; 1 member, nil; Secretary and shorthand-writer, at rate of £400 per annum; assistant shorthand-writer, at rate of £200 per annum.
- Registrar-General's Department—Deeds and Search Branch Inquiry—Commissioner, fee of £105; Secretary and shorthand-writer, £3 3s. per sitting, and 1s. per folio for transcription.

Schey-Eddy

Schey-Eddy Inquiry—President, nil ; Members, £7 7s. per sitting ; Secretary, at rate of £6 per week ; Shorthand-writer, £2 2s. per sitting, and 1s. per folio for transcription.  
 Statute Law Consolidation—Members, nil ; Secretary, at rate of £200 per annum.  
 Trial Bay Harbour Works—Commissioner, nil ; Shorthand-writer, £25 for services.

(3 and 4.)

Coal-mining Bill Inquiry—President, £680 8s., 54 sittings ; 1 member, £396 18s., 54 sittings ; 1 member, £396 18s., 54 sittings. Secretary and shorthand-writer, £950 12s. 2d., as under—54 official sittings, £113 8s. ; 165 other sittings, £346 10s. ; transcription, 12,385 folios, at 9d., £164 9s. 2d. ; writing and engrossing report, £26 5s.—£950 12s. 2d. Exclusive of travelling and other expenses.

Dean Inquiry—President, £409 10s., 39 sittings ; 1 member, £286 13s., 39 sittings ; 1 member, £143 6s. 6d., 39 sittings. 1 secretary and shorthand-writer, £310 13s., as under—61 sittings, at £2 2s., £128 2s. ; transcription, 3,651 folios, at 1s., £182 11s.—£310 13s. 1 secretary and shorthand-writer, £729 1s., as under—66 sittings, at £2 2s., £138 12s. ; 12 sittings, at £4 4s., £50 8s. ; transcription, 4,186 folios, at 1s., £209 6s. ; writing and engrossing report, £5 5s. ; secretarial work, correspondence, &c., £10 10s. ; making *précis* of evidence, £315—£729 1s.

Public Service Inquiry—On one day only two sittings were charged for, the President at £3 3s., and two members at £2 2s. per sitting.

(5.)

No.



	£	s.	d.	£	s.	d.	
<b>F. W. Curnow, Secretary—</b>							
15 August to 12 December—54 official sittings, at £2 2s...	113	8	0				
15 to 31 August—13 unofficial sittings, at £2 2s. ...	27	6	0				
1 „ 30 September—18 „ „ ...	37	16	0				
1 „ 31 October—17 „ „ ...	35	14	0				
1 „ 30 November—20 „ „ ...	42	0	0				
Transcription of shorthand notes of evidence, 325 pages; minutes of consideration of Draft Bill, Reports, and Bills, 9,048½ folios, at 9d...	339	6	5				
Writing and engrossing Reports of Commission ...	26	5	0				
Preparation of Report, &c.—12 sittings, at £2 2s.—1 to 15 December ...	25	4	0				
16 to 31 December—14 unofficial sittings, at £2 2s. ...	29	8	0				
1 „ 31 January—27 „ „ ...	56	14	0				
1 „ 29 February—25 „ „ ...	52	10	0				
1 „ 31 March—19 „ „ ...	39	18	0				
Transcription of shorthand notes—3,337 folios, at 9d. ...	125	2	9				
1 to 4 February—Expenses visiting Newcastle ...	3	4	8				
						953 16 10	
<b>Petty Cash Expenses—</b>							
16 December to 23 March—Cab-hire, stamps, &c... ..	3	16	7				
14 December ... ..	4	6	11				
10 December ... ..	5	0	0				
3 September ... ..	10	0	0				
						23 3 6	
<b>J. T. O'Brien, Messenger—</b>							
13 to 31 August—Salary at £130 per annum ... ..	6	15	5				
1 „ 30 September „ „ ... ..	10	16	8				
1 „ 31 October „ „ ... ..	10	16	8				
1 „ 31 October—Collating evidence in book form, &c., and rendering clerical assistance ... ..	10	0	0				
1 „ 30 November—Salary ... ..	10	16	8				
12 December—Copying references, &c. ... ..	10	0	0				
1 to 15 December—Salary ... ..	5	4	10				
16 December to 29 February—Salary ... ..	27	5	2				
						91 15 5	
<b>A. Alderson—</b>							
Typewriting—144 hours, at 2s. 6d. ... ..	18	0	0				
„ 97½ „ 2s. 6d. ... ..	12	3	9				
„ 82½ „ 2s. 6d. ... ..	10	8	9				
						40 12 6	
Gertrude Elwell—Typewriting ... ..						8 18 9	
Helen S. Garran „ „ ... ..						7 0 0	
C. F. Jones—Shorthand notes, &c. ... ..						6 12 0	
Commissioners for Railways ... ..						22 5 7	
Turner and Henderson ... ..						2 17 3	
Gardiner and Cool—Stamp-dater ... ..						1 10 0	
M. Walker—Newspapers ... ..						1 7 4	
<b>Witnesses' Expenses—</b>							
Adam Cook ... ..	3	11	0	Peter Bowling ... ..	3	0	0
Geo. Henderson ... ..	7	12	1	J. A. Neilson ... ..	2	2	0
Thos. Canning... ..	2	15	6	D. McGeachie ... ..	2	2	0
Peter Curran ... ..	2	15	6	Jas. Cook ... ..	1	0	0
John Odgers ... ..	2	15	6	J. B. Barclay ... ..	2	0	0
Wm. Low ... ..	2	15	6	Thos. Lloyd ... ..	1	0	0
J. Coates ... ..	2	10	0	John Owen ... ..	3	0	0
John Estell ... ..	2	10	0	Robert Hay ... ..	2	2	0
William Bower ... ..	2	10	0	Jno. Wilson ... ..	2	2	0
Thos. Abel ... ..	2	10	0	Thos. Broughall ... ..	2	2	0
W. H. Goodman ... ..	2	10	0	D. McAuliffe ... ..	2	2	0
Thos. Adams ... ..	3	7	6	F. Croudace ... ..	1	1	0
Jno. McGeachie ... ..	2	2	0	Jas. Jackson ... ..	2	0	0
A. Mathieson ... ..	2	2	0	Saml. Rees ... ..	2	0	0
Jas. Fletcher ... ..	2	2	0	H. G. Pullin ... ..	2	0	0
G. Errington ... ..	2	0	0	R. J. Jury ... ..	1	0	0
Andrew Nicol ... ..	2	0	0	Thos. Parton ... ..	2	2	0
W. T. Philpot... ..	2	0	0	W. Rennie ... ..	2	2	0
David Ritchie ... ..	2	0	0	J. May ... ..	5	1	0
David Mason ... ..	2	0	0	R. Thomas ... ..	2	2	0
Wm. Ewinn ... ..	2	0	0	Thos. Ellis ... ..	2	0	0
Thos. Owen ... ..	2	0	0	Jno. Dixon ... ..	2	2	0
Henry Hanlon ... ..	2	0	0	Wm. Humble ... ..	4	4	0
J. A. Ronaldson ... ..	1	15	6	T. L. Bates ... ..	2	2	0
G. W. Batey ... ..	2	0	0	Jas. Rowan ... ..	2	2	0
Wm. Kennedy ... ..	2	0	0				
							120 14 1
							2,813 7 2
Cost of printing ... ..							584 7 5
							£3,397 14 7



General Account—		£	s.	d.	£	s.	d.	£	s.	d.
Typewriting—W. Wilson (4 copies), 19 hours, at 3s. 3d....		.....			3	1	9			
"    G. Elwell (4 copies), 49 hours, at 3s. 3d. ...		7	19	1						
Paper and carbon ... ..		0	12	0						
		<hr/>						8	11	1
Messenger, J. T. O'Brien—Salary ... ..		8	7	9						
Stamps and 'bus fares... ..		0	2	11						
		<hr/>						8	10	8
Typewriting—H. S. Garran, 23½ hours, at 3s. 3d. ...		3	16	3						
Paper ... ..		0	10	0						
		<hr/>						4	6	3
"    A. Alderson, 39½ hours, at 3s. 3d. ... ..		.....						6	8	4
Messenger—Salary ... ..		.....			10	16	8			
Typewriting—W. Wilson, 46½ hours, at 3s. 3d. ... ..		.....						7	11	3
"    G. Elwell, 49½ hours, at 3s. 3d. ... ..		8	0	10						
Paper and carbon ... ..		0	10	0						
		<hr/>						8	10	10
"    H. S. Garran, 47 hours, at 3s. 3d. ... ..		7	12	9						
Paper ... ..		0	7	3						
		<hr/>						8	0	0
"    A. Alderson, 67½ hours, at 3s. 3d. ... ..		11	0	2						
Paper ... ..		0	1	0						
		<hr/>						11	1	2
Cab-hire, F. W. Curnow ... ..		.....						0	2	0
		<hr/>								
								77	0	0
		<hr/>								
Cost of printing ... ..								3,015	0	4
								415	10	8
		<hr/>								
Total ... ..								£3,480	11	0
		<hr/>								

1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

**FIRE BRIGADES BOARD, SYDNEY.**

(TWELFTH ANNUAL REPORT.)

Presented to Parliament, pursuant to Act 47 Vic. No. 3, sec. 7.

Printed under No. 3 Report from Printing Committee, 4 June, 1896.

The Chairman to The Chief Secretary.

Fire Brigades Board, Head-quarters Fire-station,

Sydney, 19 March, 1896.

Sir,

Pursuant to Act 47 Vic. No. 3, section 7, I have the honor, by direction of the Fire Brigades' Board, to present, for the information of the Chief Secretary, the Report of the Board upon the administration of the Department of Fire Brigades within the Metropolitan District during the twelve months proceeding the 31st December, 1895.

I have, &c.,

CHARLES BOWN,

Chairman.

REPORT OF THE FIRE BRIGADES' BOARD FOR THE YEAR 1895.

In compliance with the direction of the seventh section of the Fire Brigades Act, 1884, we have the honor to report upon the administration of the Department over which we preside.

With regard to the Board, no alteration has to be chronicled, the biennial term of office not expiring until this year.

The list of contributory municipalities was extended from thirty-two, in the previous year, to forty; Annandale being separated from the Municipal District of Leichhardt, and proclaimed a separate borough, and Auburn, Canterbury, Concord, Enfield, Hurstville, Rockdale, and Strathfield being added to the list. The total assessed value of ratable property was £5,226,072, of which £268,527 was that of the added area. Excluding that addition, for the purpose of comparison, the assessment of the area under the operation of the Act was £339,346 less than that of the similar district in the year preceding; £209,209 of the decrease being in the city of Sydney. Penrith and Richmond were proclaimed under the Act, but did not become contributory until the beginning of this year. These are notable as being the first inclusions within the Metropolitan District of municipalities so distant from the centre, and it is matter for anxious consideration how a fair amount of protection is to be extended to them. We are of opinion that when application be made for the extension of the Act to any district within the county of Cumberland, such application should be referred to us for report as to whether the Department have any prospect of being able, under existing circumstances, to provide fire protection for the municipality within a reasonable time. The contribution paid in the ratio of the assessments was equivalent to 2s. 3-55d. per £100.

The returns of the sums held at risk by the Insurance Companies amounted in all to £59,340,096, which, notwithstanding the extension of the area for which the returns were made, represented a decrease of £504,605. The number of Companies was less by two, in consequence of the retirement of the "British and Colonial" from business, and of the "Straits" from the Colony. The disappearance of the former reduced to five the number of Insurance Offices having their head-quarters in the Colony. This, under the existing regulations, will practically have the curious effect of preventing any contest for the representation of these Companies upon the Board:—for only the Manager or Secretary of one of these Companies is eligible, and when such officer receive the requisite nomination by at least two of his brother-officers, there remain only one other eligible for nomination, and one with authority to nominate. The Insurance Offices having their head-quarters outside the Colony were thirty-four in number, and these are entitled, under section 17 of the Fire Brigades Act, to also return a representative to the Board. The contribution paid by the Insurance Companies for fire-brigade maintenance amounted to 2-4 pence in every £100 of their risks.

The estimate adopted for the probable expenditure for the current year was £18,900. This represents an increase of £900 upon that of the previous year, an amount which may be considered barely sufficient for the extension of protection to the greatly-enlarged area. The utmost care has been exercised to keep the expenditure at the lowest limit consistent with the efficiency of the service.

The fire-station referred to in our last report as being in course of erection in Walker-street, North Sydney, was opened on the 5th June. The intention to establish a branch of the Metropolitan Fire Brigade there was, however, somewhat modified by the formation of a partially-paid auxiliary corps, consisting of members of the disbanded St. Leonards Volunteer Fire Company, and placing an officer and two firemen of the permanent Brigade, assisted by these auxiliaries, in charge of the station and district.

The Volunteer Fire Station at Waverley has been rebuilt, and a pair of horses are now stabled there, to enable the company to protect a greater area than heretofore. A number of telephone fire-alarms have been connected to the station.

In Paddington, Redfern, and Burwood there is prospect of the establishment of well-equipped stations, with circuits of fire-alarms running through the surrounding districts.

Fires.

Particulars of the fires which have occurred during the year, within the Metropolitan District are furnished in several appendices. These show that 533 alarms of fire were received, of which 367 were for fires of greater or less magnitude, the others being for chimney-fires, or were false alarms. This represents an average of one fire per day, and a total increase of ninety-seven over those of the previous twelve months. Notwithstanding the larger number of fires, it is a pleasing fact that the amount of destruction by fire was considerably less—indeed, the Superintendent of Fire Brigades reports that it was below that of any year since his arrival in the Colony in 1884, and the inception of the present system. The reasons for so satisfactory a conclusion, which cannot but reflect great credit upon the fire service, are no doubt similar to those given in our last Report. In the list of fires supplied hereafter it will be noticed that three took place on vessels in the harbour. Others have occurred since the close of the year, and have been successfully extinguished by the Metropolitan Fire Brigade.

Floating service for protection of shipping.

By the recurrence of fires upon vessels at the wharves, and elsewhere, the desirability of affording better protection for them is forced continually into notice. The subject has been the theme of much anxious consideration, and previous reports have annually mentioned it. The Fire Brigades Act, in section 5, provides for the voting of money by Parliament to enable the Board to acquire floating-engines, &c., but no mention is made of the maintenance of a fire-float and crew. Herein lies a difficulty which we take this opportunity to submit. It is remarkable that although the Act makes the aforesaid provision for a floating fire-engine, it yet gives no power, so far as we are aware, for its own extension to the harbour waters. It would appear that the Act can only have operation within proclaimed municipalities (*vide* section 20, and Schedule A), while Port Jackson lies altogether outside borough boundaries, which, indeed, are represented by its shores in the case of those municipalities which adjoin it. The position is unsatisfactory as regards fire-protection for shipping. This question has never been lost sight of, and as the volume of commerce increases must become more and more pressing, but it appears to be one which can scarcely be satisfactorily dealt with without preliminary amendment of the Act. Writing under date 31st August last, the Superintendent of Fire Brigades addressed to us a report, in which he remarked, "In my opinion the time has now arrived for your Board to take action for the purpose of providing a steam fire-float for the protection of the shipping in the harbour, and also to have Port Jackson proclaimed under the Fire Brigades Act." With this we cordially agree, and annually have publicly commented upon the growing requirement for protection of the kind. The chief difficulty is with regard to maintenance of a floating fire-service. If it were possible to include the harbour waters within the Metropolitan District under the Act that question would necessarily arise; and it is obvious that any such extension of the Act, by its amendment or otherwise, should also provide for the collection of the requisite revenue. For this, it would manifestly be inequitable to tax the municipalities now contributing to maintain the fire service for the protection of their own interests on land, and similarly in the case of the Insurance Companies who take no marine risks, but contribute under the Act to safeguard the risks they hold on shore. When the subject is considered many complications become apparent. It may be taken as accepted that the principal interest in shipping and cargoes is that of the owner, and if either be partly insured, with certain reservations, that of the Insurance Offices, in so far as they may be interested. The goods in question, however, together with the hulls in which they are carried, are most largely owned and assured in Great Britain, Germany, France, or America. Under the circumstances it would appear that a small tonnage due would be probably the most equitable method of apportioning and collecting the necessary funds. This would fall lightly upon those directly interested in the preservation of the property in question, the amount required being estimated at about £1,000 per annum. Otherwise, the ordinary salvage rates might be charged for the Brigade's services in extinguishing a fire upon any vessel; but this method would be more burdensome upon the sufferers, and would have other objections.

No provision for extension of Fire Brigades' Act to Port Jackson.

Preliminary amendment of the Act.

Question of maintenance.

Water supply.

The primary necessity for dealing effectively with fires is a plentiful water supply, and that the Board of Water Supply and Sewerage is sparing no effort to improve. The reservoir mentioned in our last Report is still in course of construction in the Centennial Park, and the Hornsby-Chatswood water supply scheme is another large work which is already far advanced towards completion. The latter will furnish Willoughby and the heights on the north of the harbour with an ample supply under good pressure, while the former will be of inestimable advantage for fire-extinction purposes in the city. It is anticipated that it will have the effect of enabling this Department in many places to replace the more costly manual engine by the lighter and more economical hose waggon; two of which are now being constructed.

Building Act. Explosives.

So far as we are aware there has not yet been any movement for the enactment of a Building Act, by which the city would be improved in appearance, and the risk of fire lessened. The traffic in explosives is still carried on in the old hazardous fashion, notwithstanding the attention which has frequently been called to the necessity for its regulation in the interests of public safety.

Inflammable liquids.

While the Bill to better regulate the traffic in inflammable liquids has not been brought forward, a satisfactory innovation has been made with respect to the administration of the "Storage and Sale of Kerosene Restriction Act of 1871," which had been practically a dead letter. Some correspondence upon the subject took place between the Premier, the Collector of Customs, and this Department; and on the 21st June notice appeared in the *Government Gazette* of the appointment of Mr. Powell, the Collector of Customs, as Inspector of Kerosene. Mr. Powell thereupon issued an order to the Customs Officers to furnish samples of imported kerosene and similar inflammable oils, for testing before delivery for public consumption. All substances, therefore, which come within the definition of "Kerosene" under Act 35 Vic. No. 1, whether imported or manufactured in the Colony, are now, under Mr. Powell's direction, submitted to tests to assure that their flashing-point be not below the 110° required by the Act. This is a wise precaution which must tend to safeguard the public against the obvious dangers of dealing with untested kerosene.

Fire Brigades' Act Amendment.

Every successive year the need for amendment of the Fire Brigades' Act in many important respects, becomes more manifest; and the recent lamentable occurrence at Deniliquin points the moral that such amendment is requisite not only for the Metropolitan District, but also for the country. The necessity is accentuated by the fact that a town 40 miles distant from Sydney can without reference to us be declared within the Metropolitan District, although it must be apparent that the Metropolitan Fire Brigade can just as readily protect Bourke as Penrith or Richmond. We would therefore submit that our area is already too large and scattered to be strictly metropolitan. Such districts as Manly, and those municipalities lying at a greater distance than 10 miles from the General Post Office, are scarcely within reach

reach of personal aid from the Metropolitan Brigade, and must rely upon the protection afforded by local Volunteer Fire Companies. These are maintained by subsidies from this Department, and before being registered as Fire Brigades they have to satisfy the Superintendent as to their efficiency with regard to personnel, drill, and equipment. They are also continually subject to his supervision, or that of some experienced officer under his orders. In view of recent events the inauguration of some such system of supervision with regard to Brigades in the country would appear to be most desirable; and no doubt this Department could render valuable assistance in this respect to the fire service of the Colony generally, if power were given for us to act.

One hundred and thirty-nine telephone fire-alarms are now in operation in the city and suburbs; and Head-quarters Fire-station has telephone communication with the suburban Volunteer Fire Companies' stations as far as Parramatta. Twenty-six were installed during the year, including 10 in North Sydney, 8 in Waverley, 4 in Balmain, 2 connected with the North Botany Volunteer Fire-station, 1 in Wattle-street, Ultimo, and 1 opposite the Grafton Wharf. At the close of the year there were some 122 miles of wire erected for the service, for which maintenance at the rate of £1 a mile was paid to the Postal and Electric Telegraph Department. In view of the public service which these wires render, this is a tax which we consider might well be remitted. Experience has shown that the telephone fire-alarm system acts as a deterrent to incendiarism, as well as provides the most rapid method of communicating information of an outbreak of fire, and thereby is frequently the means of enabling the firemen to extinguish a fire before much destruction has taken place. As every year proves more surely the value of the system, it is proposed to extend it further, as opportunity offers; but the annual tax of £1 a mile upon the lines, added to the primary cost of erection, must militate to some degree against more rapid extension.

The strength of the Metropolitan Fire Brigade was increased during the year from fifty-two to sixty members, and the number of partially-paid auxiliaries from five to nine. The Superintendent of Fire Brigades reports the discipline and general efficiency to be "in all respects satisfactory." There has been considerable movement and redistribution of the Brigade's appliances during the twelve months, among which may be mentioned the stationing of a steam fire-engine at Newtown, in substitution for a manual engine.

The subsidies paid to the registered Volunteer Fire Companies (*Vide* page 7), together with sundry grants for purchase of horses, repairs, additions to stations, and other items, amounted to £2,779. The Companies generally have continued to perform useful service, which is acknowledged by the Superintendent of Fire Brigades in his report, which we append. In view, however, of the protection afforded by the permanent Brigade to the city, it has been decided to eventually discontinue to maintain Volunteer Brigades within its boundaries. As far back as June, 1894, the Superintendent was requested to prepare a scheme for the gradual extinction of subsidies to the city Companies, and it is anticipated that within two years at furthest the intention will have been carried into effect.

Grants of new hose, &c., and various repairs effected to the material in the possession of the Volunteer Brigades have represented a considerable addition to the amount above mentioned; and, in addition, many of them have received from the Government grants of amounts varying from £30 to £100. These have been made without our cognizance, and this, we submit, is a practice which is fraught with danger to the discipline and efficiency of the Brigades, and may sometimes result in defeating the very object of the donation. Sub-section 9 of the seventh section of the Fire Brigades Act provides for regulations for subsidising Volunteer Fire Brigades, &c., and under the regulations so made, as well as under section 19 of the Act, the certificate of the Superintendent of Fire Brigades as to any Company's efficiency is required before a subsidy or bonus be payable to it. But it has occurred that a Brigade from which such certificate was withheld until it could show itself to be qualified, has received a grant from the Government. The effect of such procedure must be to place a Company in a position to ignore the Regulations, to render it no longer necessary for such Company to make itself efficient to manipulate its fire-extinguishing plant, and generally to tend towards the deterioration and not the improvement of the firemanship of the body. The evil, unfortunately, stops not there, for the effects of the object lesson are liable to permeate other Companies. Again, a grant may be made for some special, and perhaps laudable object, such as the erection of a fire-station; but the amount being handed over to an irresponsible Company, without any safeguard as to its proper expenditure, it may be frittered away for other purposes, while the Board, which might well be entrusted with the trusteeship of such funds, has not authority even to inquire into the expenditure of the money. There is another evil which obtains with regard to the administration of the Volunteer Brigades, and which we hope that the long-looked-for amendment of the present Fire Brigades Act will rectify:—this is, that a Company established in a district, and having collected subscriptions from the public there, or obtained the funds from other public sources, for the purchase of fire-extinguishing plant, appears to have power to sell or to remove such plant from the district. We submit that it should not be diverted from the purpose for which its purchase-money was provided, viz., the protection of a special district, without the consent of responsible trustees, say the Mayor of the district and the Chairman of the local Fire Brigade Board. In the recent case in Deniliquin it would appear, from the meagre news to hand, that the Volunteer firemen, not alone declined to work when an outbreak of fire occurred, but also locked up the fire-extinguishing appliances; while portions of the gear could not be found until valuable time had been occupied in searching for them, after the doors of the station had been broken open. Their action, we presume, was taken in the belief that the property was theirs to do what they chose with. That is a faith which is widely held, and has been acted upon. Plant which has been paid for by what in one way or another was public money has at times been sold by those entrusted with it, and there is, so far as we are aware, no authority for anyone to step in and prevent repetitions of such an occurrence whenever any Companies may elect to disband, whether in town or country. If in the case given as an illustration the property had been vested in the Mayor, who *ex officio* is also Chairman of the local Fire Brigade Board, one difficulty which arose would have been obviated, and possibly much loss prevented.

The report of the Superintendent of Fire Brigades, and various returns supplying details of the operation of the Department, are supplied in various addenda.

CHARLES BOWN,  
Chairman.

Adopted at a meeting of the Metropolitan Fire Brigades' Board, at Head-quarters Fire-station, Sydney, on the 18th March, 1896.

APPENDIX I.  
MUNICIPALITIES.

Municipality.	Assessment, 1894.	Contribution, 1895.	Municipality.	Assessment, 1894.	Contribution, 1895.
	£	£ s. d.		£	£ s. d.
City of Sydney .....	2,286,751	2,625 7 11	Manly .....	49,740	57 2 1
Alexandria .....	60,000	68 17 9	Marnickville .....	134,870	154 16 10
Annandale .....	46,983	53 18 10	Mosman .....	33,760	38 15 2
Ashfield .....	129,144	148 5 5	Newtown .....	162,168	186 3 8
Auburn .....	24,303	27 18 0	North Botany .....	20,782	23 17 2
Balmain .....	186,622	214 5 2	North Sydney .....	203,751	233 18 6
Botany .....	19,386	22 5 2	Paddington .....	171,240	196 12 0
Burwood .....	83,353	95 13 11	Parramatta .....	69,608	79 18 4
Camperdown .....	43,487	49 18 6	Petersham .....	119,411	137 1 11
Canterbury .....	38,596	44 6 3	Randwick .....	102,866	118 2 0
Concord .....	28,108	32 5 5	Redfern .....	170,280	195 9 11
Darlington .....	26,220	30 2 1	Rockdale .....	64,695	74 5 6
Drummoyne .....	23,500	26 19 7	Rookwood .....	18,739	21 10 3
Enfield .....	22,100	25 7 5	Strathfield .....	46,122	52 19 1
Erskineville .....	32,032	36 16 8	St. Peters .....	32,413	37 4 3
Five Dock .....	13,667	15 13 10	Waterloo .....	66,466	76 6 2
Glebe .....	151,228	173 12 5	Waverley .....	119,137	136 15 7
Granville .....	41,155	47 5 0	Willoughby .....	66,131	75 18 6
Hurstville .....	44,603	51 4 2	Woolahra .....	145,250	166 15 3
Kogarah .....	40,000	45 18 6			
Leichhardt .....	87,355	100 5 10	Totals .....	£ 5,226,072	6,000 0 0

APPENDIX II.  
INSURANCE COMPANIES.

Contributory Company.	Amount at risk, 31 Dec., 1894.	Contribution, 1895.	Contributory Company.	Amount at risk, 31 Dec., 1894.	Contribution, 1895.
	£	£ s. d.		£	£ s. d.
The Alliance Assurance Co. ....	1,666,716	168 10 6	Mutual Union Insurance Co. (Ltd.)	154,576	15 12 7
Atlas Assurance Co. ....	466,793	47 4 0	National Fire and Marine Insu- rance Co. of New Zealand .....	1,186,684	119 10 9
Australian Alliance Assurance Co. .	399,467	40 7 10	Netherlands-India Sea and Fire Insurance Co. (Ltd.) .....	111,610	11 5 8
Australian Mutual Fire Insurance Society .....	8,226,612	831 16 2	New Zealand Insurance Co. ....	2,061,386	208 8 8
Batavia Sea and Fire Insurance Co.	228,510	23 2 1	North British and Mercantile In- surance Co. ....	1,207,590	122 2 0
Caledonian Insurance Co. ....	425,124	42 19 8	North Queensland Insurance Co. (Ltd.) .....	400,741	40 10 5
City Mutual Fire Insurance Co. (Ltd.) .....	3,031,474	306 10 5	Northern Assurance Co. ....	740,598	74 17 8
Colonial Mutual Fire Insurance Co. (Ltd.) .....	1,081,890	109 7 10	Norwich Union Fire Insurance Society .....	2,209,388	223 7 11
Commercial Union Assurance Co. (Ltd.) .....	5,972,905	603 18 8	Palatine Insurance Co. (Ltd.) ....	460,120	46 10 6
Cornwall Fire and Marine Insurance Co. (Ltd.) .....	312,186	31 11 4	Phoenix Assurance Co. of London...	1,082,629	109 9 4
Derwent and Tamar Fire and Marine Assurance Co. ....	295,679	29 17 11	Queensland Mutual Insurance Co. (Ltd.) .....	200,018	20 4 6
Fire Underwriters' Association of N.S.W. — for offices outside N.S.W. ....	345,935	34 19 7	Royal Insurance Co. ....	2,117,050	214 1 2
Guardian Fire and Life Assurance Co. (Ltd.) .....	579,244	58 11 4	Royal Exchange Assurance Cor- poration .....	301,500	30 9 9
Imperial Insurance Co. (Ltd.) of London .....	1,406,471	142 4 3	Scottish Union and National Insu- rance Co. ....	430,849	43 11 3
Indemnity Fire and Marine Insu- rance Co. of Australasia (Ltd.)	86,775	8 15 6	South British Fire and Marine In- surance Co. of New Zealand ...	1,481,771	149 16 6
Ion Fire Insurance Co. (Ltd.) ...	266,689	26 19 4	Standard Fire and Marine Insu- rance Co. of New Zealand .....	880,707	89 1 0
Liverpool and London and Globe Insurance Co. ....	2,588,813	261 15 2	Sun Insurance Office of London ...	792,720	80 3 1
London and Lancashire Fire Insu- rance Co. ....	1,357,731	137 5 8	United Insurance Co. (Ltd.) .....	4,136,770	418 5 7
Manchester Fire Assurance Co. ....	325,804	32 18 10	United Australian Mutual Fire In- surance Co. (Ltd.) .....	485,495	49 1 9
Mercantile Mutual Insurance Co. ...	8,286,735	837 17 9	Victoria Insurance Co. (Ltd.) .....	1,546,350	156 7 1
			Totals .....	£ 59,340,096	6,000 0 0

APPENDIX III.

SUMMARY of ATTENDANCES at Board Meetings during the year 1895.—(Number of Meetings, exclusive of Committee Meetings, 28.)

Names.	Meetings.	
	Present.	Absent.
Charles Bown, J.P. (Chairman) .....	28	0
Walter Church, J.P. (Vice-Chairman) .....	26	2
Alderman J. C. Beard, J.P. ....	28	0
Edward J. Love .....	26	2
J. St. Vincent Welch, J.P. ....	25	3
Alderman William Taylor .....	28	0

APPENDIX IV.  
FIRE BRIGADES' BOARD, SYDNEY.  
ABSTRACT of RECEIPTS and EXPENDITURE for the Year ending 31st December, 1895.

RECEIPTS.		EXPENDITURE.	
	£ s. d.	£ s. d.	£ s. d.
1 January, 1895. . . . .			
To Balance—			
Commercial Banking Co of Sydney, Ltd. . . . .	576 7 6		
Superintendent's Petty Cash. . . . .	50 0 0		
		626 7 6	
To Insurance Companies—			
Alliance . . . . .	168 10 6		
Atlas . . . . .	47 4 0		
Australian Alliance . . . . .	40 7 10		
Australian Mutual . . . . .	831 19 2		
Batavia . . . . .	23 2 2		
Caledonian . . . . .	42 10 8		
City Mutual . . . . .	306 10 5		
Colonial Mutual . . . . .	109 7 10		
Commercial Union . . . . .	603 18 8		
Cornwall . . . . .	31 11 4		
Derwent and Tamar . . . . .	29 17 11		
Fire Underwriters' Association . . . . .	34 19 7		
Guardian . . . . .	58 11 4		
Imperial . . . . .	142 4 3		
Indemnity . . . . .	8 15 6		
Lion . . . . .	26 19 4		
Liverpool and London and Globe . . . . .	261 15 2		
London and Lancashire . . . . .	187 5 8		
Manchester . . . . .	32 18 10		
Mercantile Mutual . . . . .	897 17 0		
Mutual Union . . . . .	15 12 7		
National of New Zealand . . . . .	119 19 9		
Netherlands-India . . . . .	11 5 8		
New Zealand . . . . .	208 8 8		
North British and Mercantile . . . . .	122 2 0		
North Queensland . . . . .	40 10 5		
Northern . . . . .	74 17 8		
Norwich Union . . . . .	223 7 11		
Palatine . . . . .	46 10 6		
Phoenix . . . . .	109 9 4		
Queensland Mutual . . . . .	20 4 6		
Royal . . . . .	214 1 2		
Royal Exchange . . . . .	30 9 9		
Scottish Union and National . . . . .	43 11 3		
South British . . . . .	149 16 6		
Standard of New Zealand . . . . .	89 1 0		
Straits . . . . .	5 11 1		
Sun . . . . .	80 3 1		
United . . . . .	418 5 7		
United Australian Mutual . . . . .	49 1 9		
Victoria . . . . .	150 7 1		
		6,005 11 2	
To Government of New South Wales—			
Colonial Treasurer . . . . .		6,000 0 0	
To Municipalities—			
City of Sydney . . . . .	2,625 7 11		
Alexandria . . . . .	68 17 0		
Annandale . . . . .	53 18 10		
Ashfield . . . . .	148 5 5		
Auburn . . . . .	27 18 0		
Balmain . . . . .	214 5 2		
Botany . . . . .	22 5 2		
Burwood . . . . .	94 4 1		
Camperdown . . . . .	37 8 11		
Darlington . . . . .	30 2 1		
Drummoyne . . . . .	38 19 3		
Enfield . . . . .	25 7 5		
Erskineville . . . . .	36 10 8		
Five Dock . . . . .	19 9 1		
Glebe . . . . .	130 4 4		
Granville . . . . .	47 5 0		
Hurstville . . . . .	51 4 2		
Kogarah . . . . .	45 18 6		
Leichhardt . . . . .	100 5 10		
Manly . . . . .	57 2 1		
Marrickville . . . . .	154 10 10		
Mosman . . . . .	38 15 2		
Newtown . . . . .	186 3 8		
North Botany . . . . .	23 17 2		
North Sydney . . . . .	258 18 6		
Paddington . . . . .	196 12 0		
Parramatta . . . . .	79 15 4		
Petersham . . . . .	137 1 11		
Randwick . . . . .	118 2 0		
Redfern . . . . .	195 9 11		
Rockdale . . . . .	74 6 6		
Rookwood . . . . .	21 10 3		
St. Peters . . . . .	37 4 3		
Waterloo . . . . .	76 6 2		
Waverley . . . . .	130 15 7		
Willoughby . . . . .	94 0 3		
Woollahra . . . . .	166 15 3		
		5,846 9 5	
To Miscellaneous—			
Rent of quarters . . . . .	696 10 1		
Watching duties . . . . .	50 5 11		
Fines . . . . .	3 5 8		
Liquidator—Fire, Marine, and Accident In- demnity Company . . . . .	0 1 10		
Sundry services . . . . .	87 10 0		
Life premiums . . . . .	145 15 11		
Horses—sale of . . . . .	5 0 0		
North Sydney Station—refund of deposit for site . . . . .	5 0 0		
Condemned hose—sale of . . . . .	36 0 0		
		929 9 5	
Total . . . . .		£19,407 17 6	
By Miscellaneous—			
New steam fire-engine . . . . .	649 9 2		
Plant, stores, &c. (including hose, £391 14s. 10d.) . . . . .	1,011 15 6		
Clothing . . . . .	494 5 0		
Printing, stationery, postage, &c. . . . .	160 6 1		
Rates and taxes . . . . .	351 3 2		
Life premiums . . . . .	324 5 8		
Car-hire and cartage . . . . .	40 4 0		
Rewards for calls . . . . .	10 13 0		
Rewards to turncocks . . . . .	7 4 0		
Petty expenses . . . . .	24 2 7		
Services rendered . . . . .	9 15 6		
Law costs . . . . .	10 9 0		
Miscellaneous . . . . .	259 7 4		
Rent . . . . .	12 9 2		
M.F.B. Benefit Club . . . . .	7 11 2		
		3,370 0 4	
By Buildings—			
North Sydney—Erection . . . . .	984 13 6		
Waverley—Erection . . . . .	319 8 9		
Repairs, &c., to other stations . . . . .	270 11 4		
		1,574 13 7	
By Salaries and Fees—			
Salaries—M.F.B. and auxiliaries . . . . .	8,809 4 8		
Board fees . . . . .	300 0 0		
Auditors' fees . . . . .	35 0 0		
Medical fees . . . . .	15 15 0		
		9,169 19 8	
By Lighting and Fuel—			
Lighting . . . . .	426 6 5		
Fuel . . . . .	84 16 8		
		511 2 11	
By Horses—			
Purchase . . . . .	60 0 0		
Fodder . . . . .	405 15 3		
Harness . . . . .	34 11 6		
		600 6 9	
By Electrical Work—			
Telephones, fire-alarms, &c. . . . .		767 16 8	
By Volunteer Fire Companies—Subsidies—			
Alexandria . . . . .	116 0 0		
Ashfield . . . . .	135 0 0		
Balmain . . . . .	304 6 0		
Burwood . . . . .	110 0 0		
Drummoyne . . . . .	59 0 0		
Glebe . . . . .	175 0 0		
Granville . . . . .	60 0 0		
Kogarah . . . . .	40 0 0		
Leichhardt . . . . .	75 0 0		
Manly . . . . .	75 0 0		
North Botany . . . . .	70 0 0		
North City . . . . .	87 19 0		
Paddington . . . . .	162 10 0		
Brewery . . . . .	218 15 0		
Parramatta (No. 1) . . . . .	85 0 0		
(No. 2) . . . . .	97 18 0		
Randwick . . . . .	50 0 0		
Rockdale . . . . .	70 0 0		
Rookwood . . . . .	40 0 0		
Standard Brewery . . . . .	175 0 0		
St. Leonards . . . . .	83 6 3		
Waterloo . . . . .	135 0 0		
Waverley . . . . .	125 0 0		
Woollahra . . . . .	290 0 0		
		2,779 5 8	
By Volunteers employed in watching duties . . . . .		30 7 0	
By Balance, 31st December, 1895—			
Commercial Banking Co. of Sydney (Ltd.). . . . .	155 4 11		
Superintendent's petty cash . . . . .	50 0 0		
		205 4 11	
Total . . . . .		£19,407 17 6	

Z. COLLIS BARRY, Secretary.

Having examined the books and vouchers of the Fire Brigades' Board for the year ending 31st December, 1895, and also this Abstract of Receipts and Expenditure, I certify the same to be correct.

JAMES ROBERTSON, F.S.I.A., F.I.A.V.

30 January, 1896.

APPENDIX V.

## APPENDIX V.

## Mr. Superintendent Bear's Report to the Fire Brigades' Board, Sydney.

Gentlemen,

Head-quarters Fire-station, Castlereagh-street, Sydney, 24 January, 1896.

I have the honor to submit my twelfth Annual Report on the working and general efficiency of your Brigade, and of the several Volunteer Fire Companies, together with the details of fires attended in the city and suburbs, for the year ending 31st December, 1895.

The total number of alarms for fires, or supposed fires, was 469. Of these, 82 were false alarms, 18 proved to be only chimney alarms, 367 were for actual fires, and 2 were casualties in which life was endangered or lost, but in which no damage was done to the building or contents.

Of the fires, 299 were slight or trifling, 20 were serious, and 48 resulted in total destruction.

Of the 367 fires, 159 were insured, 179 not insured, and in 29 instances the insurances on the buildings or contents could not be ascertained.

In addition to the ordinary fires, there have been 64 chimney-fires requiring the attendance of firemen with hand-pump only, making an aggregate total of 533 calls for fires, false alarms, chimney-fires, and casualties.

The fires of 1895, as compared with those of 1894, show an increase of 97; in the chimney-fires reported as houses on fire a decrease of 16, and those attended by firemen with hand-pump only an increase of 8.

In the fires which were slight there has been an increase of 93, in serious a decrease of 3, and in those which resulted in total destruction an increase of 7.

Among the buildings totally destroyed are classed sheds, weatherboard cottages, &c.

In reviewing the fires of the year, I may say that there has been less actual destruction of property in this than in any year since the Act came into operation.

The most notable fires of the year are as follows:—

Under the heading of serious—

8th March.—The Liverpool Arms Hotel, Pitt-street, City.

13th March.—The Adelaide Bond, Smith's Wharf, Miller's Point.

12th April.—The Colonial Sugar Company's Works, Harris-street, City.

9th July.—The Warehouse of Messrs. Sanders & Co., Pyrmont.

11th August.—The Boot Factory of Messrs. J. P. Wright & Co., Elizabeth-street, City.

22nd August.—The s.s. "Victorian" and "Emu," in Johnstone's Bay.

30th October.—The Warehouse of Messrs. Jules Renard & Co., 306, Kent-street, City.

19th November.—The Clothing Factory of Messrs. Weingott & Sons, 433 and 435, Kent-street, City.

Under the heading of total—

28th February.—The Furniture Shop of Mr. John Pearce, Newtown Road, Darlington.

22nd June.—The Boiling-down Works of Mr. W. W. Whatmore, Wilson's Creek, Lane Cove.

Appended are detailed statements of the various fires attended by the Brigade and by the Volunteer Fire Companies as well as those unattended, but which have been reported to the Brigade from various sources, and a member has been sent to obtain the necessary particulars.

The summaries appended show the particular dates, time of call, time of outbreak, trades, localities, insurances, hourly, daily, weekly, and monthly. There is also appended a summary of the supposed origin or cause of fires for the year.

Referring to the summary of localities, it will be noticed that in the city of Sydney alone there were 170 "calls," 99 of which were for actual fires, 20 were false alarms, 10 were for chimney-fires reported as houses on fire, 40 were for chimney-fires attended by firemen with hand-pump only, and there was one casualty.

In the suburbs there were 363 calls, 263 of which were for actual fires, 62 were false alarms, 8 were chimney-fires reported as houses on fire, 24 were chimney-fires attended by firemen with hand-pump only, and there was one casualty.

For full details of fires, and for the particular wards of the city, and the municipalities in which the same have occurred, see appendices attached. A summary of trades is also appended.

Full particulars of the strength of the Brigade (members and plant), together with that of the Volunteer Fire Companies, are here appended.



## MEMBERS OF THE BRIGADE.

Name.	Rank.	Date of Entry.	Salary.	Where stationed.
William Douglas Bear	Superintendent of Fire Brigades, and Inspector of Kerosene.	2 May, 1884	Government Officer.	Head-quarters.
Alfred Webb	Deputy Superintendent	26 June, 1888	£400	do
John J. Ford	Foreman	1 Aug., 1884	£182	No. 2 Station.
Sydney Watson	do	1 Jan., 1835	£182	No. 3 Station.
John Snelson	do	14 July, 1884	£182	No. 4 Station.
John McKnight	Engineer	14 July, 1884	£177	Head-quarters.
George Lang	Senior fireman	7 Jan., 1885	£162	do
Thomas P. Gordon	do	3 Jan., 1885	£162	No. 5 Station.
Thomas Gorman	do	18 June, 1885	£162	Head-quarters.
Samuel Holman	do	11 Feb., 1886	£162	No. 6 Station.
James Hancock	do	1 Aug., 1884	£162	No. 3 Station.
Thomas G. Cutts	do	19 Mar., 1888	£162	No. 2 Station.
Robert W. Nash	do	1 Jan., 1887	£162	No. 3 Station.
Joseph Stanchell	Veterinary and Farrier	1 July, 1884	£150	Head-quarters.
George C. Gray	1st-class fireman	1 July, 1884	£150	No. 4 Station.
Harris S. Davis	do	18 April, 1888	£150	No. 5 Station.
Francis Howard	do	19 April, 1888	£150	No. 3 Station.
Stephen H. Eyre	do	6 Aug., 1888	£150	Head-quarters.
Frank Jackson	do	7 Feb., 1889	£150	No. 3 Station.
John Graham	do	15 April, 1889	£150	No. 2 Station.
George J. Parsons	do	6 Sept., 1889	£150	do
George H. Dadd	do	13 Feb., 1890	£150	do
Augustus J. Gerard	do	21 Feb., 1890	£150	Head-quarters.
George Alehin	do	23 April, 1890	£150	No. 4 Station.
Albert E. Pickering	do	18 Sept., 1890	£150	No. 6 Station.
Charles May	do	3 Oct., 1890	£150	No. 5 Station.
Harrie B. Lee	do	19 Feb., 1891	£150	Head-quarters.
Edward Smith	do	7 May, 1891	£150	No. 3 Station.
John A. Becker	do	12 Mar., 1891	£150	Head-quarters.
William T. Corkill	do	25 May, 1891	£150	No. 2 Station.
James W. Morris	do	1 Dec., 1891	£150	Head-quarters.
Harry Skelton	do	24 Mar., 1892	£150	No. 2 Station.
Robert Hunter	do	16 April, 1892	£150	do
Edward Pember	do	23 April, 1892	£150	Head-quarters.
John A. Nicoll	2nd-class fireman "A"	3 Aug., 1892	£140	do
Alexander Jamieson	2nd-class fireman "B"	18 Nov., 1892	£130	No. 2 Station.
John T. Arnold	do do	3 Jan., 1893	£130	do
Francis W. Brooks	do do	6 Jan., 1893	£130	No. 4 Station.
Ephraim Stoneham	do do	6 Jan., 1893	£130	Head-quarters.
Edward J. Roberts	do do	9 Jan., 1893	£130	do
Herbert J. Houghton	do do	11 Jan., 1893	£130	do
James Jones	do do	1 June, 1893	£130	No. 3 Station.
Joseph Morris	do do	28 July, 1891	£130	No. 5 Station.
William Whitnall	3rd-class fireman "A"	19 June, 1893	£120	No. 3 Station.
George W. Barry	do do	21 Aug., 1893	£120	Head-quarters.
David Killia	3rd-class fireman "B"	19 Jan., 1894	£112	do
Christopher C. Digby	do do	30 Mar., 1894	£112	do
Charles L. Birmingham	do do	30 Mar., 1894	£112	No. 6 Station.
George E. J. Wills	do do	21 May, 1894	£112	Head-quarters.
Arthur Houghton	do do	4 Sept., 1894	£112	do
William Best	do do	9 Oct., 1894	£112	No. 3 Station.
Walter Haywood	Probation	5 April, 1895	£106	Head-quarters.
Joseph Chase	do	8 April, 1895	£106	do
Kenneth Arthurson	do	8 April, 1895	£106	do
Thomas L. Thomas	do	9 April, 1895	£106	do
Francis A. Tuck	do	4 May, 1895	£106	do
Archibald Murray	do	5 Sept., 1895	£106	do
James Carson	do	9 Oct., 1895	£106	do
James E. Pym	do	4 Oct., 1895	£106	do
Thomas P. Nance	do	6 Dec., 1895	£106	do
<i>Auxiliaries.</i>				
Thomas H. Cook	Auxiliary Fireman	4 Oct., 1893	.....	No. 5 Station.
David Anderson	do	23 Oct., 1893	.....	do
Walter D. Taylor	do	1 May, 1894	.....	do
David Vandine	do	17 June, 1895	.....	No. 6 Station.
John P. Deano	do	17 June, 1895	.....	do
John J. Davidson	do	17 June, 1895	.....	do
Charles B. Duncan	do	25 June, 1895	.....	do
Ernest C. Evans	do	8 July, 1895	.....	do
John Jones	do	23 Sept., 1895	.....	do

## TELEPHONE FIRE-ALARMS.

No. of Box.	Fire-station to which the Alarm is connected.	Locality of Alarm.	Approximate Distance from Station, in yards.
1	Head-quarters, Castlereagh-street	Corner of George and Park Streets	430
2	" " " "	" York and King Streets	900
3	" " " "	" Pitt and King Streets	860
4	" " " "	" Elizabeth and King Streets	760
5	" " " "	" Liverpool and College Streets	440
6	" " " "	" William-street and Boomerang Road	850
7	" " " "	" William and Victoria Streets	1,540
8	" " " "	" Park and Elizabeth Streets	330
9	" " " "	Macquarie-street, opposite Parliament House	1,030

## TELEPHONE FIRE-ALARMS—continued.

No. of Box.	Fire-station to which the Alarm is connected.	Locality of Alarm.	Approximate Distance from Station; in yards.
10	No. 3 Station, George-street North	Corner of Hunter and Bligh Streets	737
11	" " " "	" Hunter and George Streets	506
12	Head-quarters	" Pitt and Market Streets	610
13	" " " "	" Sussex and King Streets	1,100
14	" " " "	" Sussex and Erskine Streets	1,400
15	No. 3 Station, George street North	" Kent and Margaret Streets	814
16	Head-quarters	" Elizabeth and Hay Streets	600
17	" " " "	A. Hordern & Sons, George-street, Haymarket	980
18	" " " "	Corner of Sussex and Liverpool Streets	530
19	" " " "	" Kent and Bathurst Streets	440
20	" " " "	" Kent and Market Streets	770
21	" " " "	" Oxford and Riley Streets	780
22	" " " "	" George-street and Union-lane	400
23	" " " "	" George and Goulburn Streets	700
24	" " " "	" York and Market Streets	800
25	" " " "	" Factory and Harbour Streets (J. Bridge & Sons)	850
26	No. 4 Station, Stanmore Road, Marrickville	" Norton-street and Parramatta Road, Leichhardt	1,232
27	" " " "	" Railway premises and Lackey-street, Summer Hill	2,667
28	" " " "	" Marrickville and Illawarra Roads, Marrickville	2,420
29	" " " "	Council Chambers, St. Peters	3,406
30	No. 3 Station, George-street North	Sussex-street North, near Grafton Wharf	1,023
31	" " " "	George-street North, opposite Mariners' Church	330
32	" " " "	Corner of George-street North and Lower Fort-street	660
33	" " " "	" Lower Fort-street and Windmill-street	902
34	" " " "	" Argyle and Playfair Streets	319
35	" " " "	" Argyle and Kent Streets	792
36	" " " "	" Victoria Terrace, opp. Eye Hospital, Miller's Point	1,070
37	" " " "	" Young-street and Circular Quay	330
38	" " " "	" Macquarie street North and Circular Quay	797
39	" " " "	" Bridge and Pitt Streets	352
40	" " " "	Opposite Terry's lane, Pitt-street	770
41	" " " "	Corner of Church Hill and Charlotte-place	384
42	" " " "	Kent-street, near Gas-lane	714
43	" " " "	Corner of Beat and O Connell Streets	561
44	No. 2 Station, George-street West	" Elizabeth and Devonshire Streets	710
45	" " " "	" George-street West and Newtown Road	620
46	" " " "	" Regent and Cleveland Streets	550
47	" " " "	" Redfern and Botany Streets, Redfern	980
48	" " " "	Elizabeth-street, Redfern, opposite Hordern's stables	1,430
49	" " " "	Corner of M'Arthur and Harris Streets	660
50	" " " "	" Figg and Harris Streets	1,210
51	" " " "	" Bowman and Harris Streets	2,210
52	G.P.O.	" George and Barrack Streets	1,154
53	No. 4 Station, Stanmore Road, Marrickville	" Johnston-street and Parramatta Road, North Annandale	2,094
54	" " " "	Corner of Johnston and Booth Streets, North Annandale	2,889
55	" " " "	" Illawarra and Warren Roads, Marrickville	3,393
56	No. 5 Station, Newtown	" King and Hordern Streets, Newtown	506
57	" " " "	Intersection of Newtown and Darlington Roads and Forbes-street, Newtown	1,232
58	" " " "	Corner of Camden-street and Cook's River Road, Newtown	649
59	" " " "	Intersection of Wells-street, Cook's River Road, and Rochford-street, Newtown	1,059
60	" " " "	Corner of Enmore Road and Wilford-street, Newtown	561
61	" " " "	" Enmore and Stanmore Roads, Newtown	970
62	" " " "	In front of Council Chambers, Erskineville Road, Macdonaldtown	842
63	" " " "	Corner of Parramatta Road and Parkes-street, Campedown	1,507
64	No. 2 Station	" Abercrombie-place and Cleveland-street	760
65	" " " "	" Abercrombie and Shepherd Streets	1,100
66	Woollahra Volunteer Station, Moncur-st...	" Queen-street and Old South Head Road	550
67	" " " "	" Nelson-street and Old South Head Road	825
68	" " " "	" Cowper and Oxford Streets, Waverley	1,540
69	" " " "	" Ocean-street and Point Piper Road	770
70	" " " "	" South and Bay Streets	1,790
71	" " " "	" Darling Point Road and New South Head Road	1,540
72	" " " "	" Yarrabee and Darling Point Roads	2,220
73	" " " "	" Forth-street and Edgecliff Road	467
74	Darlinghurst and Randwick Police Stations	" Carlton-street, Kensington Estate	3,520
75	No. 3 Station, George-street North	" Watson's Road and Upper Fort-street	902
76	" " " "	" Essex and Harrington Streets	220
77	" " " "	" Bridge and Macquarie Streets	704
78	Head-quarters	" Erskine-street and York-lane	1,320
79	" " " "	" Druitt-street, opposite Weighbridge	670
80	" " " "	" Bourke and William Streets	1,200
81	" " " "	" Bourke and Junction Streets	1,530
82	" " " "	" Macleay-street and Elizabeth Bay Road	1,980
83	" " " "	" Macleay and Wilde Streets, opposite clock	2,550
84	" " " "	" Victoria and Orwell Streets	1,930
85	" " " "	" Bourke and Liverpool Streets	1,100
86	" " " "	" Goulburn and Macquarie Streets South	600
87	No. 4 Station, Stanmore Road, Marrickville	" Cook's River Road and Railway Road	4,180
88	Glebe Volunteer Station, Mitchell-street	" Cowper and Glebe Streets	340
89	" " " "	" Brougham and Lyndhurst Streets	550
90	" " " "	" Glebe and Wigram Roads	870
91	" " " "	" Glebe Road and Leichhardt-street	1,300
92	" " " "	" Ross-street and Bridge Road	880
93	No. 4 Station, Stanmore Road, Marrickville	" Council Chambers, Marrickville	1,800

## TELEPHONE FIRE-ALARMS—continued.

No. of Box.	Fire-station to which the Alarm is connected.	Locality of Alarm.	Approximate Distance from Station; in yards
94	No. 5 Station, Newtown	Corner of Margaret and Ferndale Streets, Newtown	737
95	No. 2 Station, George-street West	" Cleveland-street and Darlington Road	1,100
96	" " "	" Council Chambers, Darlington	1,310
97	" " "	" Old Parramatta Road and Forest-street	1,550
98	No. 4 Station, Stanmore Road, Marrickville	" Stanmore Road and Holt-street	540
99	" " "	" Cambridge and Merchant Streets	1,122
100	" " "	" Palace and Norwood Streets	1,109
101	" " "	" New Canterbury Road and Frazer's Road	790
102	" " "	" " " Eltham-street	1,494
103	" " "	" " " Marrickville Road	2,099
104	Head-quarters	" Bathurst and Barker Streets	760
105	" " "	" Market-street, opposite Wharf Street	950
106	" " "	" Phillip-street, near St Stephen's Church	1,050
107	No. 3 Station, George-street North	Foot of Beltington street, near China S. N. Co.'s Wharf	1,023
108	No. 2 Station, George-street West	Opposite the "Tower Inn," George-street	400
109	Paddington Volunteer Station, Oxford-st.	Corner of Park Road and Regent-street	400
110	" " "	" Elizabeth and Underwood Streets	500
111	" " "	" " Hargrave Streets	880
112	" " "	" Glenmore Road and Gurner-street	700
113	" " "	" " Liverpool-street	900
114	" " "	" " Oxford-street	630
115	No. 6 Station, North Sydney	Intersection of Alfred, Junction, and McDougal Streets	550
116	" " "	" Alfred and Fitzroy Streets	1,210
117	" " "	Corner of Blue's Point Road and Blue-street	575
118	" " "	" " Crescent-street North	1,150
119	" " "	" Miller and Ridge Streets, opposite Tram Terminus	792
120	" " "	" " Falcon Streets	1,276
121	" " "	Intersection of Lane Cove and Willoughby Roads and Falcon-street	1,750
122	" " "	Intersection of Military and Ben Boyd Roads	1,900
123	" " "	Corner of Military Road and Glover, Spofforth, and M'Pherson Streets, Mosman	3,100
124	" " "	Corner of Military and Avenue Roads, Mosman	5,250
125	Balmain Volunteer Station, Darling-street	" Darling and Macdonald Streets, Balmain	660
126	" " "	" " Johnston Streets, Balmain	1,830
127	" " "	" " Wisc Streets, Balmain	1,170
128	" " "	" " Cambridge Streets, Balmain	1,610
129	No. 2 Station, George-street West	" Harris-street and Pyrmont Bridge Road	1,660
130	North Botany Volunteer Station, Rickely-street.	" Botany Road and Bay Street	2,245
131	" " "	" Botany and Stephen Roads	4,550
132	Waverley Volunteer Station, Carrington Road.	" Birrell and Cowper Streets, Waverley	620
133	" " "	Intersection of Birrell and Watson Streets, Waverley	1,250
134	" " "	" Penkville and Bennett Streets and Bondi Road, Waverley	1,430
135	" " "	Corner of Bondi Road and Denham Street, Waverley	2,230
136	" " "	In front of Council Chambers, Bondi Road, Waverley	1,030
137	" " "	Intersection of Flood and Angelsea Streets and Old South Head Road, Waverley	1,870
138	" " "	Corner of M'Pherson and Albion Streets, Waverley	660
139	" " "	Intersection of M'Pherson, Carlton, and Arden Streets, Waverley.	1,190

The total amount paid as subsidies and bonuses to the several Volunteer Fire Companies for the year was £2,779 5s. 8d. In addition to this, four Companies received at the rate of £12 per annum each for attendance on the telephone fire-alarms connected with their stations.

Besides that here stated, a large amount has been expended in the purchase of new plant and hose, and in executing repairs to damaged plant for the Volunteer Fire Companies.

The approximate value of the whole of your Board's plant, including the land and stations held in trust by your Board, I estimate at £88,348 12s. 6d. The value of the Volunteer Companies' plant is not included in this sum.

During the year 26 telephone fire-alarms have been erected, making a present total of 139. Orders have already been given for the erection of 7 others in the districts of Pyrmont, Balmain, and Darling Point.

Thirty new instruments have been ordered, and may shortly be expected to arrive.

I trust that by the end of this year the telephone fire-alarm system may be largely extended. During 1895 we received 164 calls from this source, of which 105 were for actual fires. To our excellent system of fire-alarms may be attributed the saving of life and much property, as through them we receive timely notice, and are thus enabled to be promptly on the scene and extinguish the fire before it reaches dangerous dimensions.

A complete list of the telephone fire-alarms erected to date is appended.

During the year telephonic communication has been established between the premises of Messrs. Elliott Bros., Balmain, the Messrs. Tooth & Co.'s Brewery, George-street West, and the Railway Department, Redfern. In addition to those named, the following places are also in direct telephonic communication with our stations, viz.:—Nearly the whole of the Volunteer Stations, the Police Stations, the University, the Government Printing Office, Darling Harbour Railway Goods Stores, the Theatres, and some of the principal business-houses.

Many of the Volunteer Fire-stations have been placed in telephonic communication with the local Post Office Exchange in their respective districts, and our stations at Marrickville, Newtown, and North Sydney are also connected with the Exchange in their districts.

Head-quarters station is connected with the General Post Office Exchange by two direct lines, and arrangements are in existence by which the watchmen employed by the principal business-houses report through regularly during the night. The Exchange is open to receive and transmit calls at any hour of the day or night.

The telephone fire-alarms and nearly the whole of the electrical appliances have been erected and kept in good order by the members of the Brigade.

The permanent staff attend to the work in the following departments:—Blacksmithing, carpentering, electrical, engineering, painting, plumbing, horse-shoeing, hose-repairing.

During the year considerable repairs have been effected to some of our engines. Some have been supplied with new fore-carriages, the boilers of some of the steam fire-engines have been refitted with new tubes, and new and more powerful brakes have been fitted to all the engines. In addition to this, the stations have been repainted and renovated by the men, and a considerable amount of work has been done in repairs for the Volunteer Companies—in fact, I may say that hundreds of pounds are saved annually by our own men doing the work in the several departments, and I may add that many of our men are excellent tradesmen.

The

The new station which was erected by your Board at North Sydney was opened on the 5th June, and it has been manned by a staff of three permanent men and six auxiliaries. The latter were taken from the old Volunteer Fire Company. There are ten telephone fire-alarms connected with this station, and I hope to have these supplemented by eight others. I consider this number necessary for the requirements of the large district to be protected. This station, including site, plant, and fire-alarms, cost £2,388. I am pleased to be able to speak well of the working of the station since its opening.

The Waverley Station has been rebuilt, and necessary alterations and improvements effected to modernise the building and enable two horses to be kept constantly in attendance. The station is in communication with Headquarters Station through Woollahra Volunteer Station, with the Randwick Volunteer Station, and with the local Exchange, and there are eight telephone fire-alarms connected therewith. The total cost (approximately) of the station, including land, building, alterations, and fire-alarms, has been £808. The Volunteer Company have been permitted to continue in occupation, and I trust, with the encouragement they have received from your Board, they may carry out their duties in an efficient manner.

The Balmain Volunteer Fire Company, which was placed in occupation of the station built in that suburb by your Board, has given every satisfaction during the year, and I hope they may continue to do so.

In my opinion the placing of volunteers in stations built by your Board in the outer suburbs is the best method to ensure success on their part, as it brings them under better discipline, and it also makes them more anxious to give satisfaction. Should they at any time prove incompetent your Board can easily replace them by permanent men.

I have repeatedly urged upon your Board the urgent necessity that exists for an extension of the permanent staff to those suburbs contiguous to the city proper.

The rapid growth of Paddington and Redfern makes it incumbent on your Board to provide better protection for the proper safeguarding of life and property in those important and very populous districts. Until permanent stations are built it is impossible to erect a proper system of fire-alarms, and at present those suburbs are almost wholly without alarms and without the proper means for saving life in case of fire.

I maintain that such thickly-populated districts should not be dependent on volunteers for protection; for, while they are following their ordinary avocations, or are absent at competitions, processions, &c., during the day, there is no protection afforded. It causes me very grave anxiety to think that those places should be permitted to remain in their present unprotected state. The volunteer system has done very good service in the past, but a better organisation and a more complete arrangement is required for such suburbs as Paddington and Redfern.

I here venture to express the hope that this year may see the last of the Volunteer Companies in the city and in the suburbs immediately adjoining. I have had to do what no other Superintendent of any Fire Brigade in the world has had to do, viz., work a permanent staff in conjunction with volunteers in such a large and very important city as Sydney; and I have done thus ever since the formation of the Brigade, and I must say that it has been a source of constant trouble and anxiety to me. The time, however, has now arrived when it becomes imperative on your Board to strengthen the permanent staff, and I therefore urge upon you the desirability of notifying the Volunteer Companies now in existence in the city and immediate suburbs that they can no longer receive the recognition or support of your Board. Adelaide, Brisbane, and Melbourne have abolished the volunteer system, and Sydney is the only city in the world of any importance where volunteers are recognised and receive financial support.

Owing to the outer districts being sparsely populated, I would recommend that the deserving Volunteer Companies there receive every encouragement from your Board, but in the city proper and its immediate suburbs the case is materially different, and our stations here must be manned by permanent men and auxiliaries who will be amenable to discipline and be thoroughly trained to the work.

I desire to point out that if our area continues to be increased at its present rate (without a corresponding increase in your income) the cost will become very burdensome on your Board.

Omitting the municipalities which have recently been proclaimed under the Act, the area under the jurisdiction of your Board comprises 136 square miles. The towns which have lately come within the operation of the Act, viz., Richmond and Penrith, are nearly 40 miles from the metropolis, and both towns are on different lines and are about 18 miles apart. It is therefore apparent that we cannot afford them that supervision which is necessary for their interests; and, in my opinion, a country Fire Brigades Act is much needed to meet the requirements of towns outside the metropolis.

I am convinced that our own district should be more consolidated, and that the outer and more scattered portions should be eliminated until such time as they become more thickly populated, and have a better system of water reticulation.

Such scattered and sparsely-populated districts as Canterbury, Concord, Fivedock, Kogarah, Mosman, Rockdale, and Willoughby cannot be benefitted by being within your Board's jurisdiction, nor can they be afforded protection commensurate with their contributions to your Board.

During the year the Water and Sewerage Board has made great strides in reticulating the water and in increasing the pressure in the suburbs. The improvements being carried out at North Sydney will so increase the pressure from Chatswood to Hornsby that your Board will be saved the expense of importing a steam fire-engine and the maintenance thereof for that district.

I trust when the Centennial Park Reservoir is completed we shall have only this and the Potts Hill Reservoir supply in the city, instead of Potts Hill, Paddington, and Crown-street, as at present. This will be a great advantage to your Board by making such an increase in the water-pressure that it will not be necessary for you to import many more steam fire-engines.

I have anticipated this by recommending your Board to have two hose-waggons built, and before the end of the year I hope to see my way clear to recommending the building of two more, to take the place of manual engines. You will, therefore, not require to import any more manual engines for the suburban districts, and those manuals which will be replaced by the hose-waggons can be removed to the more distant stations.

I deem it my duty to draw the attention of your Board to my report of last year concerning the necessity for providing a floating steam fire-engine for the protection of the shipping in our harbour. It is certainly strange that the largest and most important harbour in the Southern Hemisphere, with its large and expanding trade, its numerous wharves and stores, and its many bays and inlets, should be permitted to remain for so long a time without adequate means being provided for its protection against fire. It may be said that we have the pilot steamer "Captain Cook"; but owing to the difficulty in obtaining her services, and to the fact that she may be outside the harbour at the time of a fire, she is practically unreliable as far as we are concerned. I may here remind you that the northern station was built partly with the object of having the men stationed there available for service on board a float, which, it was expected, would be stationed at Circular Quay.

The strength of the Brigade now stands at sixty permanent men, including myself, and nine auxiliaries. As I have obtained your authority for increasing this number by four additional men, I hope soon to add that many to the staff, in order to have them thoroughly trained to take the places of those who may be removed from the city to suburban stations.

I regret to have to record three deaths in the Brigade during the year. William M'Knight, one of the engineers, died on the 16th of February. He joined the Brigade on its formation, and had previously served in the Insurance Brigade for a number of years. He was an excellent officer and a good mechanic, and I deeply regret his loss. Thomas E. Clarke committed suicide on the 21st April, and George Lawton was accidentally killed by falling off the ladder-van while proceeding to a fire at the premises of Messrs. J. P. Wright & Co., Elizabeth-street, City, on the 11th August. Lawton had only joined the Brigade on the 29th of July, and was, therefore, only a fortnight in the service.

I have to thank the officers and members of the Volunteer Fire Companies for their valuable assistance during the year, and also the officers and members of the Police Force for their very effective assistance. I have also to return my thanks to the turncocks and to the public generally for their valuable co-operation.

The discipline and general efficiency of the Brigade are in all respects satisfactory, and although the duties at times have been severe, the work has been performed cheerfully and well.

In conclusion, I desire to tender my most sincere thanks to your Board for the cordial support you have accorded me.

I have, &c.,

WILLIAM D. BEAR,

Superintendent of Fire Brigades and Inspector of Kerosene.

APPENDIX VI.

DETAILS of Fires which have occurred within the Metropolitan District during the Year ending December, 1895.

Date	When discovered.	Time of call.	Locality.	Name of tenant.	How premises occupied.	Construction of premises.	Origin or supposed cause of fire.	Insurances.		Extent of damage, &c.	Extinguished by
								Contents.	Building.		
Tuesday, 1 January.	11:10 p.m.	11:20 p.m.	Frederick and John Streets, Ashfield.	James Blackham	Dairyman	Weatherboard, and iron roof	Unknown	None	None	A wooden building, used as a cowshed and lumber room, roof partly fallen in, and contents damaged by fire and water.	M.F.B. and Ashfield V.F. Co., with one hydrant.
Thursday, 3 January.	3:0 a.m.	3:2 a.m.	Arbitration-street, City	Harrison, Jones, & Devlin	Wool-brokers	Stone, and iron roof.	"	Several offices, £75,000.	Several offices, £50,000.	A quantity of wattle bark damaged by fire and water in basement.	M.F.B., with one hydrant.
"	2:10 p.m.	2:17 p.m.	53, Albany-street, Peter-sham	E. Richards	Private dwelling.	Brick, and slate roof.	Tar boiling over.	None	None	About 2 gallons of tar destroyed by fire	Inmates and neighbours.
"	1:2 p.m.	1:3 p.m.	Ocean-street, Woollahra	All Saints' Church, Rev. W. Mort, Incumbent.	Licensed victualler.	Stone, with iron & shingle roof.	Gas bracket	Building and contents, Australian Mutual.	"	A small portion of weatherboard porch damaged by fire	Woollahra V.F. Co., with hand pump.
Friday, 4 January.	2:12 a.m.	2:14 a.m.	244, George-street, City	John Donnison, "Metropolitan Hotel."	Private dwelling.	Brick, and iron roof.	Light thrown down.	United Insurance Co.	None	A quantity of bedding burned in back room on third floor.	M.F.B., with one hydrant.
Saturday, 5 January.	11:50 a.m.	11:56 a.m.	Bishop-street, Marrickville.	H. J. Molone	Private dwelling.	Brick, and slate roof.	Turpentine boiling over.	None	None	A small portion of floor-cloth damaged by fire	Inmates.
"	8:40 p.m.	8:44 p.m.	Yule-street, Marrickville	Alec M'Kellar	"	"	Candle	"	Australian Mutual, £400.	Bed, bedding, and window curtains damaged by fire in front bedroom on ground floor.	Inmates and neighbours, with buckets of water.
Sunday, 6 January.	8:15 p.m.	8:15 p.m.	Botany Road, East Botany.	Quong Hing	Garden	"	Light thrown down.	"	None	A quantity of grass burned in garden at rear of premises	N. Botany V.F. Co., with bushes.
Tuesday, 8 January.	1:27 a.m.	1:33 a.m.	104, Fitzroy-street, City	Waugh	Grocer	Brick, and slate roof.	Unknown	Mercantile Mutual, £100.	Unknown	Stock in shop on ground floor slightly damaged by fire	Inmates, with buckets of water.
Thursday, 10 January.	2:42 p.m.	2:44 p.m.	165, William-street, City	Beaumont & Sons	Painters	Brick, and iron roof.	"	Caledonian	"	A small quantity of painters' materials damaged by fire and water in ground floor of workshop at rear of premises.	Employees and M.F.B., with buckets of water.
Thursday, 10 January.	9:5 p.m.	9:8 p.m.	Hay street, City	Tangye's (Limited); F. J. Waller, manager.	Machinists	Wood and iron, with iron and glass roof.	Gas stove	Several offices, £30,000.	City Mutual, £6,150.	Engineer's workshop on first floor and contents severely damaged by fire and water, and about 50 feet of roof damaged by fire.	M.F.B., with two steamers.
Friday, 11 January.	8:50 p.m.	8:53 p.m.	8, Mort street, Balmain	Thomas Kyle	Shed	Wood, and iron roof.	Kerosene-lamp	None	None	Side and roof of shed slightly damaged by fire	Balmain V.F. Co., with one hydrant.
Sunday, 13 January	4:35 p.m.	4:9 p.m.	24, Pitt-street, City	E. Durant & Co.	Jewellers	Brick, and iron roof.	Unknown	S. British, £100.	"	Back room on ground floor and contents severely damaged by fire and water. Front shop on same floor and contents slightly damaged by heat and water.	M.F.B., with one hydrant.
"	8:35 p.m.	9:3 p.m.	Fornhill-street, Canterbury.	John Thompson	Private dwelling	Wood, and canvas roof	Candle	None	"	A two-roomed dwelling with part of contents burned and fallen down.	Burned itself out
Tuesday, 15 January	6:10 p.m.	6:15 p.m.	Walkin-street, Newtown	H. Scott	Stable	Weatherboard, and iron roof.	Light thrown down.	"	"	Side of stable slightly damaged by fire	Inmates, with buckets of water.
Wednesday, 16 January.	11:54 p.m.	11:57 p.m.	387, Elizabeth-street, City	Elizabeth Stephenson, "Albion Hotel."	Licensed victualler.	Brick, and slate roof.	Candle	City Mutual	Unknown	Window curtains burned in front room on first floor	Inmates, with water.
Saturday, 17 January.	9:35 p.m.	9:30 p.m.	193, Castlereagh-street, City	Mrs. Burns	Boarding-house	Brick, and iron roof.	Candle	None	"	A small portion of furniture damaged by fire in front room on first floor.	Inmates.
Thursday, 24 January.	11:0 p.m.	None rec'd.	86, George's Road, Hurstville	William Martin	Private dwelling.	Weatherboard, and iron roof.	Unknown	"	Northwich Union, £100.	A weatherboard cottage of five rooms and contents burned out and fallen down.	Burned itself out
Friday, 26 January.	5:20 p.m.	5:12 p.m.	64, Drumm-street, City	J. H. Walker & Co.	Coach-builders' ironmongers.	Brick, and iron roof.	"	N. Zealand, £400	Australian Mutual, £5,000	About 3 cwt. of oakum damaged by fire in basement	M.F.B., with one hydrant.
Saturday, 20 January.	12:02 a.m.	12:06 a.m.	Margaret and Clarence Streets, City.	E. A. Viles	Draper	Brick, and slate roof.	"	Victoria, £300	North British, £200	Shop on ground floor and contents very severely damaged by fire and water.	M.F.B., with one hydrant
"	2:30 a.m.	2:34 a.m.	Off Bayswater Road, Woollahra.	Mow Lum	Gardener	Yard	Fireworks	None	None	A quantity of rubbish burned in yard at rear of premises	Inmates, with buckets of water.
"	2:57 p.m.	3:2 p.m.	197, Liverpool-st., City	Dr. W. W. J. O'Reilly	Private dwelling.	Brick, and slate roof.	Turpentine boiling over.	Unknown	Unknown	Wooden partition slightly damaged by fire in front room on second floor; carpet and furniture damaged by water.	"
"	8:35 p.m.	8:40 p.m.	35, Elizabeth-street, Waterloo.	John Stewart	"	Brick, and iron roof.	Candle	None	"	A small quantity of wearing apparel damaged by fire and water in back bedroom on first floor.	"
Sunday, 27 January.	8:5 p.m.	8:10 p.m.	19, Margaret-st., City	R. Jones	Tailor	Brick, and slate roof.	Gas-bracket	"	North British, £200.	Window curtain burned in front room on first floor.	"
"	9:40 p.m.	None rec'd.	Pittwater Road, Green-dale.	Unoccupied	Private dwelling.	Weatherboard, and iron roof.	Unknown	"	Mercantile Mutual, £200	A weatherboard cottage burned out and fallen down	Burned itself out.
Monday, 28 January.	4:28 a.m.	4:30 a.m.	337, George-st., City	Briscoe, Drysdale, & Co.	Machinery im-porters.	Brick, with iron and glass roof.	"	Several offices, £45,000.	Several offices, £10,000.	A small quantity of stock on fourth floor in York-street warehouse burned, and contents on floors under slightly damaged by water.	M.F.B., assisted by several Volunteer Fire Companies, with one hydrant.
Monday, 28 January.	6:49 p.m.	6:51 p.m.	Denman and Cottenham Streets, Glebe.	Patrick Smyth	Licensed victualler.	Brick, and iron roof.	"	None	Aust. Mutua, £700. Col. Mutual, £300	A quantity of wearing apparel burned, and furniture damaged by fire and water in front room on first floor.	Inmates and M.F.B., with buckets of water.
Tuesday, 29 January.	9:50 p.m.	9:55 p.m.	Railway workshops, Eveleigh.	Railway Department	Workshops	"	Spark from forge	"	None	Work bench damaged by fire in No. 6 fitters' shop	Railway employees, with one hydrant.
"	11:30 p.m.	None rec'd.	Birkenhead Road, Drum-moyne.	J. C. Jeffries	Bootmaker	Weatherboard, and iron roof.	Unknown	Manchester, £25.	Unknown	A weatherboard building of two rooms and contents burned out and part of roof off.	Drummoyne V.F. Co., with one hydrant.
Thursday, 31 January.	8:50 p.m.	8:51 p.m.	166, Macquarie-street, City.	Mrs. Whitley	Private dwelling.	Brick, and slate roof.	Candle	None	City Mutual	Window curtains burned in front room on first floor	Inmates and Standard Brewery Vol. Fire Co., with buckets of water.

DETAILS of Fires which have occurred within the Metropolitan District—continued.

Date.	When discovered.	Time of call.	Locality.	Name of tenant.	How premises occupied.	Construction of premises.	Origin or supposed cause of fire.	Insurances.		Extent of damage, &c.	Extinguished by
								Contents.	Building.		
Thursday, 31 January.	9-20 p.m.	9-24 p.m.	122-126, Regent-street, Redfern.	Richd Hingstone .....	Furniture-dealer.	Wood and iron iron roof.	Unknown .....	Northern, £320 ..	None .....	Three shops and contents and dwelling of five rooms and contents severely damaged by fire, and part of roof off.	M.F.B. and Alexandria V.F. Co., with two hydrants.
"	"	"	120, Regent-street ..	G. T. Savane .....	Ironmonger .....	Brick, and iron roof.	" .....	Australian Mutual, £100 ..	" .....	Window in bedroom on first floor burned out, and contents of room slightly damaged by fire.	"
"	"	"	128 " " .....	F. Wayvel .....	Fruiterer .....	Wood and iron, iron roof.	" .....	None .....	" .....	Furniture damaged by water and removal .....	"
Saturday, 2 February.	1 20 a.m.	1 33 a.m.	White st., Leichhardt ..	James Lee .....	Furrier .....	Weatherboard, and iron roof.	" .....	Building and contents, Commercial Union, £600.	Unknown .....	A building, about 20 x 70 ft., containing a quantity of fur, machinery, &c., burned out and fallen down	M.F.B., with one hydrant, assisted by Vol. Fire Cos.
"	3-57 a.m.	3-59 a.m.	44, King-street, City ..	A. Paul .....	Restaurant .....	Brick, and iron roof.	Spark from chimney	None .....	Unknown .....	Roof of kitchen slightly damaged by fire .....	Inmates of Post Office Coffee Palace with private hydr. Neighbours, with buckets of water.
Monday, 4 February	3-0 p.m.	None rec'd	Bray street, Concord ..	Unoccupied .....	Private dwelling	Wood, and iron roof	Unknown .....	" .....	None .....	A building of one floor, about 12 x 30 ft., burned out and fallen down; side of stable adjoining slightly damaged by fire.	"
Tuesday, 5 February	10-5 p.m.	10-9 p.m.	4, Wesley-terrace, Eliza- beth-st., Waterloo	Joseph M'Quirk .....	" .....	Brick, and iron roof.	Candle .....	" .....	" .....	Bed and bedding, and a small quantity of wearing apparel, damaged by fire and water, in back room on ground floor	M.F.B., with buckets of water.
Wednesday 6 February	10-35 p.m.	10-41 p.m.	526, George-street, City	Ernest Hines .....	Draper .....	Brick, and slate roof.	Burning rubbish	" .....	" .....	A small quantity of rubbish burned in back room on ground floor	M.F.B., with buckets of water.
Saturday, 9 February.	10 43 a.m.	10 45 a.m.	Harris and Figg Streets, Clifmo.	Sydney Municipal Council.		Open yard ..	Tar boiling over..	" .....	" .....	About 200 gallons of tar destroyed by fire .....	M.F.B., with sand.
"	11-50 a.m.	11-59 a.m.	South-street, Ashfield.	Geo. Doyle .....	Private dwelling	Brick, and slate roof.	Turpentine boil- ing over.	Australian Mutual, £600.	Unknown .....	A small portion of kitchen flooring damaged by fire .....	Inmates and neighbours, with buckets of water.
"	8 57 p.m.	8 59 p.m.	Orwell-street, City ..	S. Ward .....	Stables .....	Weatherboard, and iron roof.	Light thrown down.	None .....	None .....	Corn-bin and contents slightly damaged by fire and water..	Neighbours, with buckets of water.
Tuesday, 12 February	10 40 p.m.	10 45 p.m.	462 466, King-street, Newtown.	Thos. Hodgkinson ..	Foundry .....	Wood and iron, iron roof.	Over-heat of flue	London and Lan- cashire, £1,700	London and Lan- cashire £3,700.	A small portion of flooring damaged by fire .....	M.F.B., with hand-pump.
Thursday, 21 February	8 45 p.m.	8 49 p.m.	"Annaudale," Alfred- explosion st., North Sydney	G. F. Butler .....	Private building..	Weatherboard, and iron roof.	Kerosene-lamp, explosion of.	Cornwall, £300	Mercantile Mutual, £200.	Front bedroom and contents severely damaged by fire and water, sitting room and contents damaged by heat, smoke, and water.	St. Leonards Volunteer Fire Co., with one hydrant.
Friday, 22 February.	1-10 a.m.	1-16 a.m.	23, Foster-street, Leichhardt.	John Scults .....	Stables .....	" .....	Unknown .....	Australian Mutual, £100.	Australian Mutual, £20.	Coach-house and stables, with contents, consisting of buggy, waggon, &c., burned out and fallen down.	Leichhardt Volunteer Fire Co., with one hydrant, assisted by M.F.B.
Friday, 22 February.	11-50 p.m.	11 57 p.m.	Holden-street, Ashfield	Henry Schmidt .....	Builder .....	" .....	Unknown .....	Australian Mutual, £20.	Australian Mutual, £15.	A building about 12 x 16 ft. used as a workshop, with con- tents, burned out and fallen down.	Ashfield Volunteer Fire Co. and neighbours, with buckets of water.
Saturday, 23 February.	10 2 p.m.	10 9 p.m.	56, Botany-street, Waterloo.	Chas. Taylor .....	Private dwelling..	Brick, and iron roof.	Kerosene-lamp, upsetting of.	None .....	Imperial, £100 ..	A small quantity of furniture in front sitting-room on ground floor damaged by fire and water, walls of same damaged by heat.	Inmates, with buckets of water.
Tuesday, 26 February.	1-50 p.m.	1-52 p.m.	69, George-street, West, City	Wm. Armour .....	Fruiterer .....	" .....	Matches, children playing with.	Atlas, £80 .....	Unknown .....	A small quantity of furniture, bedding, and wearing apparel damaged by fire and water in back bedroom on first floor.	Inmates and M.F.B., with buckets of water.
Wednesday, 27 February	10 25 a.m.	None rec'd.	Parker-street, City .....	Australian Gaslight Co., James Harvie, Inspector		Brick, and slate roof.	Gas explosion..	Building and contents—Norwich Union and United Insurance Coys	" .....	Side and roof of gauge and testing-room blown down, side of Inspector's kitchen adjoining partly blown down, testing gear and machinery damaged by explosion.	"
Thursday, 23 February	12 55 a.m.	12 59 a.m.	13 and 14, Newtown Road, Darlington.	John Pearce .....	Furniture-dealer.	Weatherboard, and iron roof	Unknown .....	Manchester, £200	Mercantile Mutual, £450.	A building of one floor, about 45 x 105 ft., containing a large quantity of furniture, and stables adjoining, burned out and fallen down; three rooms at rear used as a dwelling, and loft over, also burned out and fallen down; one horse burned to death.	M.F.B., with two steamers and one hydrant, assisted by Vol. F. Cos.
Saturday, 2 March.	11-15 a.m.	11 21 a.m.	382, Oxford-street, Paddington	Taylor and Ward .....	Produce merchants.	Stone, and iron roof.	Candle .....	None .....	Unknown .....	Some empty cases and a small portion of wooden partition burned in back room on ground floor.	Inmates, with buckets of water.
"	8-53 p.m.	None rec'd.	Miller-street, North Sydney	W. J. Guise .....	Chemist .....	Brick, and slingle roof.	Matches, children playing with.	London and Liverpool and Globe, £350.	London and Liverpool and Globe, £350.	A small quantity of furniture in back room on first floor slightly damaged by fire.	"
"	9 5 p.m.	9 10 p.m.	Burwood Road, Bur- wood.	J. Monaghan .....	Butcher .....	Weatherboard, and iron roof.	Gas-bracket .....	Unknown .....	Unknown .....	Bed and bedding burned in back room on ground floor, rest of contents damaged by heat and water.	Burwood Vol. F. Co., with one hydrant.
Sunday, 3 March.	8 13 p.m.	8 16 p.m.	Weil-street, Cook's River	Robt. Clapp .....	Private dwelling	Brick, and iron roof.	Kerosene-lamp, explosion of.	None .....	" .....	Bed and bedding damaged by fire and water in front room on ground floor.	Inmates, with buckets of water.
Thursday, 7 March.	11-25 a.m.	None rec'd.	Burwood Road and George-st., Burwood.	W. J. Neilson* .....	Grocer .....	Weatherboard, and iron roof	Matches, children playing with.	" .....	" .....	Furniture and wearing apparel in bedroom on ground floor slightly damaged by fire and water.	"
Friday, 8 March.	3-2 a.m.	3-3 a.m.	181, Pitt-street, City ..	W. J. Packer, "The Liverpool Arms," late "Warby's Hotel."	Licensed victualler.	Brick and stone, and asphalt roof.	Unknown .....	United, £600; National, £600; Mercantile Mutual, £500—£1,700.	United, £10,000	Staircase of five floors from first floor to roof severely damaged by fire; laundry of wood and iron construction on roof burned down; three rooms on first floor and contents severely damaged by water; four rooms on second floor partially damaged by fire, and contents severely damaged by water; contents of six rooms on third floor severely damaged by water; contents of seven rooms on fourth floor severely damaged by water; bar and contents on ground floor and basement also damaged by water.	M.F.B., with one steamer and one hydrant, assisted by several Vol. Fire Cos.

\* Previous fire, July 18th, 1892.

DETAILS of Fires which have occurred within the Metropolitan District—continued.

Date.	When discovered	Time of call.	Locality.	Name of tenant.	How premises occupied.	Construction of premises.	Origin or supposed cause of fire.	Insurances.		Extent of damage, &c.	Extinguished by
								Contents.	Building.		
Friday, 8 March.	3 2 a.m.	3 3 a.m.	121, King-street, City	as. Cox	Fruiterer and greengrocer.	Brick and stone, and asphalt roof.	Unknown	Colonial Mutual, £250.	Unknown	Contents of shop on ground floor damaged by water	M.F.B., with one steamer and one hydrant, assisted by several Vol. Fire Cos.
Saturday, 9 March.	6 0 p.m.	None rec'd.	Prospect-street, Leichhardt.	A. Shallard & Co.	General dealer	Brick, and iron roof.	Candle	Aust. Mutual	"	Furniture and contents of front bedroom on ground floor slightly damaged by fire and water.	Inmates and neighbours, with buckets of water.
"	10 8 p.m.	10 10 p.m.	Gordon-street, Abbotston Road, Balmain	Federal Timber Co	Timber-yard	Wood and iron, iron roof.	Spark from furnace.	Several offices	Several offices	A quantity of shavings burned, and door of furnace-room slightly damaged by fire.	Employees, with buckets of water.
Sunday, 10 March.	5 0 a.m.	None rec'd.	Stammore Road, Marickville.	Joseph Laverty	Grocer	Yard	Hot ashes	None	None	A small portion of wooden fencing burned in yard at rear of premises.	Inmates, with buckets of water.
Tuesday, 12 March.	6 43 p.m.	6 47 p.m.	16, Cowper-street, Glebe	Thos. Stanson	Private dwelling.	Brick, and iron roof.	Candle	"	"	Bed-curtains and wearing apparel damaged by fire and water in back bedroom on first floor.	"
Wednesday, 13 March.	10 9 p.m.	10 11 p.m.	Adehide Bond, Smith's Wharf, Miller's Point.	Gilles Bros.	Warehouses	Stone, and slate roof.	Unknown	Several offices, £24,770.	Alliance, £1,000	Top floor of No. 9 store and contents severely damaged by fire and water, and part of roof oil; contents on floors under damaged by water.	M.F.B., with two steamers, assisted by several Vol. Fire Cos.
Thursday, 14 March.	6 56 a.m.	6 58 a.m.	61, Pine-street, City	John Burns	Omnibus proprietor.	Weatherboard, and iron roof	"	City Mutual, £50.	City Mutual, £150	Stable, about 25 x 12 feet, together with fodder, harness, &c., and workshops, with contents, consisting of tools, &c., very severely damaged by fire and roof partly fallen in. One horse severely burned	M.F.B., with one hydrant, assisted by Vol. Fire Cos.
Friday, 15 March.	7 40 p.m.	7 45 p.m.	Alma-street, North Sydney.	R. A. Thomas	Private dwelling.	Weatherboard, and slung roof	Gas explosion	United, £360	Australian Mutual, £350.	A cottage of four rooms; front room and contents damaged by explosion; windows of kitchen and doors of passage broken.	Inmates, with buckets of water.
Sunday, 17 March.	3 35 a.m.	3 37 a.m.	16, Erskine-street, City.	John Tollitson	Fruiterer	Brick, and iron roof.	Unknown	New Zealand, £100.	Mercantile Mutual, £185.	Shop and contents, consisting of fruit, &c., nearly burned out.	M.F.B., with one hydrant.
Monday, 18 March.	9 40 a.m.	9 44 a.m.	545, George-street, City	S. J. Kirby	Stationer	"	Light thrown down	New Zealand, £250.	Unknown	A quantity of music and a number of books damaged by fire and water in rear of shop on ground floor	Inmates, with buckets of water.
Tuesday, 19 March.	6 24 a.m.	6 27 a.m.	Terminus-street, City	D. W. Popkin, "Derby Hotel"	Licensed victualler.	"	Spark from chimney	None	"	A small quantity of clothing in laundry on roof of building damaged by fire.	"
Thursday, 21 March.	8 10 p.m.	8 13 p.m.	2, Bent-street, Paddington.	Arthur Booth	Private dwelling	"	Candle	"	"	A small quantity of furniture in front room on first floor slightly damaged by fire.	"
"	9 30 p.m.	9 36 p.m.	Cook-street, Canterbury	J. F. Hoare	"	Weatherboard, and iron roof.	"	"	None	A cottage of three rooms with contents burned out and fallen down	Ashfield Vol. Fire Co., with buckets of water.
"	"	"	"	Wm. Reader	"	Brick, and iron roof	"	"	"	Side of house damaged by heat; furniture damaged by removal.	"
Friday, 22 March.	8 40 p.m.	8 50 p.m.	"Sea View," Bondi	L. K. Walker	"	Weatherboard, and iron roof.	"	Scottish Union, £300.	City Mutual, £300	A cottage of three rooms, with contents and outhouse, burned out and fallen down.	Waverley and Woolahra Vol. Fire Cos., with two hydrants.
"	"	"	Cliff Cottage, Bondi	Mrs. Middlemas	"	"	"	None	"	Side of cottage severely damaged by fire, and furniture damaged by removal.	"
Saturday, 23 March.	8 13 p.m.	8 18 p.m.	18, The Avenue, Campdown.	Martin Moran	"	Brick, and slate roof.	"	"	Unknown	Bed, bedding, and wearing apparel in back room on first floor slightly damaged by fire and water.	Inmates, with buckets of water.
Monday, 25 March.	9 12 p.m.	9 15 p.m.	216, Castlereagh-street, City.	Heiron and Smith	Billiard-table makers.	Brick, and iron roof.	Lighted lamp	London and Lancashire, £1,100	"	A small quantity of stock damaged by fire in workshop on first floor.	M.F.B., with one hydrant.
Wednesday, 27 March.	4 10 p.m.	4 27 p.m.	43, Lawson-st., Balmain	J. F. Finerman	Private dwelling.	Weatherboard, and iron roof.	Unknown	None	None	A shed about 16 x 12 ft. at rear of premises used as wash-house burned out and fallen down.	Balmain Vol. Fire Co., with one hydrant.
"	7 0 p.m.	7 4 p.m.	30, Brougham-street, Glebe.	Thomas Naughton	"	Brick, and iron roof.	Candle	"	Unknown	A small quantity of furniture damaged by fire and water in front bedroom on first floor.	Inmates and neighbours, with buckets of water.
Friday, 29 March.	11 0 p.m.	11 1 p.m.	49, 61, Miller-street, Ultimo.	Triggs and Marr	Foundry	Wood and iron.	Over-heat of furnace.	Unknown	"	About 2 x 8 ft. of wooden partition at rear of furnace damaged by fire.	Night watchman, with buckets of water.
Saturday, 30 March.	11 45 a.m.	11 49 a.m.	Liberty-street, New town.	Railway Department	Bridge	"	Spark from locomotive.	None	None	About 2 x 2 ft. of planking on bridge damaged by fire and cutting away.	M.F.B., with hand-pump.
"	9 55 p.m.	9 40 p.m.	Parramatta Road, Leichhardt.	Mrs. Casson	Fancy goods dealer.	Weatherboard, and iron roof	Kerosene-lamp, upsetting of	"	Imperial, £200	Shop and contents, consisting of fancy goods, &c., damaged by fire and water	M.F.B., with one hydrant.
Sunday, 31 March.	10 30 p.m.	10 40 p.m.	Barker-street, Randwick	Jonas Newman	Grocer	"	Unknown	"	None	Shop and contents slightly damaged by fire and water	Inmates, with buckets of water.
Monday, 7 April.	3 50 a.m.	3 55 a.m.	363, Oxford-street, Paddington.	C. Roberts	"	Brick, and slate roof.	Rats at matches	United, £250	Unknown	A small quantity of stock damaged by fire and water	Paddington V.F. Co., with one hydrant.
"	8 27 p.m.	8 29 p.m.	159, Glebe Road, Glebe	Eden & Co.	Drapers	Brick, and iron roof.	Light thrown down.	Norwich Union, £1,650	"	A small quantity of straw burned in loft at rear of premises	Neighbours, with buckets of water
Thursday, 4 April.	3 10 p.m.	None rec'd.	40 and 48, Margaret-street, City.	T. Hollingworth	Boarding-house	Brick, and slate roof.	Candle	North Queens-land, £1,000	"	Bedroom over stable at rear of premises and contents slightly damaged by fire and water.	Inmates, with buckets of water.
Friday, 5 April.	7 15 p.m.	7 19 p.m.	Clarence-street, City	Grosvenor Hotel Co.; S. Paget, Manager.	Licensed victualliers.	Brick, and iron roof	Gas-bracket	Com. Union, £10,000.	Imperial, £1,650 13s. 4d. Scottish Union, £1,656 13s. 4d. 5s. 000	Window-curtain burned and window-frame slightly damaged by fire in front room on third floor.	Inmates, with buckets of water.
Monday, 8 April.	7 5 p.m.	None rec'd.	17, Watkin-street, Newtown.	H. L. Green	Private dwelling.	"	Kerosene-lamp, upsetting of.	None	Unknown	Furniture in back room on ground floor slightly damaged by fire and water.	"

\* John Tollitson burned about the hands. † Emma Hoare, aged 5 years, and Emily Hoare, aged 18 months, burned to death. ‡ Previous fires—23rd July, 1894; 2nd May, 1892; 27th March, 1889.

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DETAILS of Fires which have occurred within the Metropolitan District—continued.

Date.	When discovered.	Time of call.	Locality.	Name of tenant.	How premises occupied.	Construction of premises.	Origin or supposed cause of fire.	Insurances.		Extent of damage, &c.	Extinguished by
								Contents.	Building.		
Tuesday, 9 April	11 20 p.m.	11 35 p.m.	St. Paul-street, Randwick	Chas. Calcraft	Shed	Wood and iron	Unknown	None	Unknown	A shed containing a quantity of workman's tools burned out and fallen down.	Randwick V.F. Co., with one hydrant
Thursday, 11 April	1 47 a.m.	1 48 a.m.	Beamish-street, Canterbury.	Min Lee	Private dwelling	Weatherboard, and iron roof.	"	"	None	A cottage of six rooms, with contents, burned out and fallen down.	Burned itself out.
Friday, 12 April	6 10 p.m.	6 15 p.m.	Harris-street, Pyrmont	Colonial Sugar Co., J. Muir, manager.	Sugar-store	"	Spontaneous ignition.	Several offices, £3,000.	"	Store and contents, consisting of 1,893 bales of bags, severely damaged by fire, and a quantity of sugar in bags damaged by water.	M.F.B., with three steam fire-engines and two hydrants, assisted by several V.F. Cos.
Saturday, 13 April	8 15 p.m.	None rec'd.	Watkin-street, Rockdale	P. Porteous	Private dwelling.	Brick, and iron roof.	Unknown	Unknown	Unknown	Bed and bedding damaged by fire in bedroom on first floor	Rockdale V.F. Co., with buckets of water
Sunday, 14 April	2 0 a.m.	2 6 a.m.	Marrickville Road, Marrickville.	Alex. Dean	Furniture-dealer	Wood, and iron roof.	"	United, £225	United, £450	Building of one floor 20 x 110 ft. used as shop, workshop, and stables, with contents nearly burned out and roof partly off, one horse burned to death.	M.F.B., with two hydrants, assisted by several Vol. F. Cos.
"	"	"	"	J. F. Wood	Grocer	Wood and iron, with iron roof.	"	United, £600	"	Shed about 12 x 30 ft., used as a jam factory, with contents burned out and fallen down; about 7 tons firewood burned, and contents of front premises damaged by removal.	"
"	"	"	"	G. J. Smith	Drapery	Brick, with iron roof.	"	National New Zealand, £650.	Mercantile Mutual, £1,300.	Stable in rear of premises burned out and fallen down; window on first floor of front building burned out, and walls damaged by heat.	"
Monday, 15 April	1 28 a.m.	1 31 a.m.	Clarence-street, City	Grosvenor Hotel Co., S. Paget, manager.	Licensed victualers.	Brick, and iron roof.	"	Royal, Imperial, and Scottish Union, £3,000.	Commercial Union, £10,000.	A small portion of shelving damaged by fire in lower bar ..	Inmates, with buckets of water.
Tuesday, 16 April	12 3 a.m.	12 6 a.m.	383, Oxford-street, Paddington.	L. R. Hind	Provision-dealer.	"	"	United Australian Mutual, £200.	Australian Mutual, £500.	Back part of shop and contents damaged by fire and water.	Paddington V. F. Co., with one hydrant, assisted by other Vol F Cos.
Tuesday, 16 April	2 54 a.m.	2 55 a.m.	Wiley-lane, Canterbury	Charles Davis	Sheds	Wood, and iron roof.	"	None	None	Weatherboard buildings, covering an area of about 36 x 16 feet, containing a quantity of fallow, harness, tools, &c., burned out and fallen down.	Burned itself out.
"	9 30 p.m.	None rec'd.	114, Botany-street, Waterloo.	James Embien	Private dwelling.	Weatherboard, and iron roof.	Light thrown down.	"	Unknown	Ceiling of back kitchen on ground floor damaged by fire and water.	Inmates, with buckets of water.
Thursday, 18 April	9 30 p.m.	9 42 p.m.	114, Oxford-street, Paddington.	L. R. Hind	Provision-dealer.	Brick, and iron roof.	Unknown	Unknown	"	A portion of flooring and a small quantity of wearing apparel damaged by fire in back room on first floor.	"
"	8 20 p.m.	None rec'd.	Kensington-street, City.	Tooth & Co.	Brewers	Open yard	Defective gas-pipe	None	None	A small portion of fencing damaged by fire in yard adjoining brewery.	Employees, with buckets of water.
Saturday, 20 April	3 30 a.m.	3 34 a.m.	Gordon-street, Paddington.	Herr Rasmussen	Private-dwelling.	Stone, and slate roof.	Candle	Unknown	Unknown	Bed, bedding, and furniture in back bed room on first floor damaged by fire and water.	Inmates and Police, with buckets of water.
"	7 0 p.m.	7 16 p.m.	Greenwich Point, Willeoughby.	John Cane	"	Weatherboard, and iron roof.	Kerosene-lamp, upsetting of	None	Australian Mutual	A shed, used as dwelling, together with contents, burned out and fallen down.	St. Leonards Volunteer Fire Company.
Sunday, 21 April	12 3 a.m.	None rec'd.	Archer-street, Willeoughby	Thos. Fulton	Shed	Wood	Unknown	"	None	A small shed, at rear of building in course of erection, together with contents, burned out and fallen down.	Neighbours, with buckets of water
Tuesday, 23 April	2 35 p.m.	None rec'd.	James-street, Rockdale	Robt. Tattle	Paddock	"	Light thrown down.	"	"	A quantity of grass burned in paddock	Rockdale V.F. Co.
Wednesday, 24 April	12 4 a.m.	12 7 a.m.	Grove-street, Glebe	Grace Bros.	Shed	Wood, and iron roof.	Vagrants smoking	"	"	Two crates of crockery and side of shed damaged by fire ..	M.F.B., with one hydrant.
"	3 35 p.m.	3 40 p.m.	Underwood-street, Paddington.	Wm. Barnard	Grocer	Stone, with iron and shingle roof.	Defective gas-pipe	London and Lancashire, £200.	Unknown	A small quantity of stock slightly damaged by fire and water.	Inmates, with buckets of water.
Friday, 26 April	3 0 a.m.	3 14 a.m.	"Vilette," Bondi Road, Waverley.	A. A. Lock	Private dwelling.	Stone, and shingle roof.	Unknown	Australian Alliance, £250.	"	Cupboard and contents in detached kitchen at rear of premises damaged by fire.	"
"	3 30 a.m.	None rec'd.	Anselm-street, Enfield.	Frank Petersen	"	Weatherboard, and iron roof.	"	Commere'l Union, £50.	Commere'l Union, £75.	A cottage of four rooms and contents burned out and fallen down.	Burned itself out.
Saturday, 27 April	6 0 p.m.	None rec'd.	William-street, Granville	Granville Municipal Council.	Yard	"	Light thrown down	None	None	A small portion of fencing destroyed by fire	Granville V. F. Co., with buckets of water.
Tuesday, 30 April	5 50 p.m.	5 54 p.m.	32, Glenmore Road, Paddington.	Mrs. Roberts	Private dwelling.	Brick, and shingle roof	Foul chimney	"	Unknown	A small portion of shingle roof damaged by fire	Paddington Brewery V. F. Co., with buckets of water
"	7 45 p.m.	7 50 p.m.	Sorrell-street, Parramatta	J. Cranney	Builder	Yard	Light thrown down.	"	None	A quantity of shavings burned in yard	Parramatta V. F. Co. No. 2, with buckets of water.
Wednesday, 1 May	9 0 p.m.	9 27 p.m.	85, Halloran-street, Leichhardt	George Dyer	Private dwelling.	Weatherboard, and iron roof	"	Victoria, £85	Mert. Mutual, £175, Victoria, £30	Back, bedroom on ground floor, and contents, severely damaged by fire and water.	Lilyfield V. F. Co., with one hydrant.
Thursday, 2 May	11 30 a.m.	11 44 a.m.	7, Mansfield-street, Glebe	Joseph Priestly	"	Brick, and iron roof.	Unknown	None	None	A building, about 12 ft. x 18 ft., used as a laundry, with contents, burned out, and roof partly off; side of kitchen, adjoining, severely damaged by heat.	M.F.B., with one hydrant.
Friday, 3 May	3 8 a.m.	3 10 a.m.	Johnstone-street, Annandale.	L. W. Clarke	"	Weatherboard, and iron roof.	Candle	"	"	A cottage of two rooms, with contents, burned out and fallen down.	M.F.B., with two hydrants.
"	2 55 p.m.	3 0 p.m.	Nicholson-street, Balmain.	Unoccupied	"	Brick, and iron roof.	Light thrown down.	"	"	A quantity of rubbish burned in yard at rear of premises ..	Workmen, with buckets of water.

\* Previous fires—April 6th, 1895; July 23rd, 1894; May 2nd, 1892; March 27th, 1889.

† The son of John Cane, aged 12 months, burned to death.

‡ Thomas Fulton, aged 35 years, burned to death.

DETAILS of Fires which have occurred within the Metropolitan District—continued.

Date.	When discovered.	Time of call.	Locality.	Name of tenant.	How premises occupied.	Construction of premises.	Origin or supposed cause of fire.	Insurances.		Extent of damage, &c.	Extinguished by
								Contents.	Building.		
Saturday, 4 May.	6 30 a.m.	None rec'd.	58 Campbell-street, North Sydney.	His Excellency Rear-Admiral C. A. P. Bridge.	Private dwelling	Brick and stone, slate roof.	Spark from wax taper	Unknown	Unknown	Window-blind burned and window damaged by heat, in front room on ground floor.	Burned itself out.
"	11 14 a.m.	11 16 a.m.	Caledonia-street, Paddington.	G. P. Jones.	Builder	Wood, and iron roof.	Tar boiling over.	None	"	A quantity of tar destroyed by fire in yard adjoining work-shop.	Employees and Woollahra V. F. Co., with sand.
Friday, 10 May.	1 30 a.m.	None rec'd.	10 Erskineville Road, Erskineville.	J. Cassler	Butcher	Yard	Hot ashes	"	None	A small portion of fencing damaged by fire at rear of premises.	Police, with buckets of water.
Saturday, 11 May.	6 16 p.m.	6 10 p.m.	Darling-street, Balmain.	E. Houston	Confectioner	Brick, and iron roof.	Gas explosion	"	"	Shop window and contents damaged by fire and water	Inmates, with buckets of water.
Tuesday, 14 May.	12 20 p.m.	12 28 p.m.	Glenmore Road, Paddington.	Mrs. Dean	Private dwelling	Stone, iron; shingle roof.	Spark from chimney.	Unknown	Australian Mutual, £2,000.	A small portion of roof and ceiling damaged by fire and cutting away.	Paddington and Paddington Brewery V. F. Cos., with buckets of water.
Wednesday, 15 May.	4 10 a.m.	4 15 a.m.	42, Beattie-street, Balmain.	Jennie Scott	Produce merchant	Weatherboard, with iron roof	Unknown	Queensland Mutual, £200.	Unknown	A building about 30 x 50, front portion of store with contents, consisting of about 7 tons of fodder, burned out and fallen down; rear portion of building, used as a dwelling, with contents, burned out and roof off.	Balmain V. F. Co., assisted by M.F.B., with one hydrant.
Wednesday, 15 May.	11 10 p.m.	11 12 p.m.	188, Regent-street, Redfern.	Henry Field	Private dwelling	Brick, with iron roof.	Spark from chimney.	None	"	Some empty cases damaged by fire in rear of premises	Inmates with buckets of water.
Thursday, 16 May.	9 20 p.m.	9 26 p.m.	61, Arundel Terrace, Glebe.	H. Bartlett	"	Brick, with slate roof.	Candle	United, £400	"	Bedding and furniture in back room on ground floor damaged by fire and water.	"
Monday, 20 May.	7 48 p.m.	7 50 p.m.	Macquarie-street, Parramatta.	Government	Asylum.	Weatherboard, with iron roof.	"	None	None	A quantity of clothing burned in back room on ground floor	"
Friday, 24 May.	6 30 p.m.	6 34 p.m.	Carrington Road, Waverley.	Mrs. Craddock	Confectioner	Brick, with iron roof.	Fireworks	"	Norwich Union, £300.	Shop window and contents damaged by fire and water	Waverley V. F. Co., with one hydrant.
Saturday, 26 May.	1 0 a.m.	1 2 a.m.	Charlotte-place, City	T. J. McMahon	Tobacconist	"	Unknown	"	Unknown	A small quantity of stock damaged by fire and water in shop on ground floor.	M.F.B., with one hydrant.
Monday, 27 May.	9 53 p.m.	10 1 p.m.	Gladstone-street, Balmain.	N.S.W. Government	Public School	"	"	"	None	Cupboard under staircase in infant school on ground floor, with contents, damaged by fire and water.	Balmain Vol. Fire Co., with one hydrant.
Tuesday, 28 May.	9 30 p.m.	None rec'd.	2, Pitt-street, Waterloo	Thos. Skinner	Grocer	Weatherboard, with iron roof	"	Manchester, £100	Unknown	A small quantity of stock damaged by fire and water in shop; ceiling damaged by heat.	Inmates, with buckets of water
Thursday, 30 May.	12 15 a.m.	12 20 a.m.	6, Bathurst-street, City	J. Gillespie & Co.	Spice-mills	Brick, with iron roof	Boiler overheating	Various offices, £750.	New Zealand, £250.	A few bags of chillies and chicory damaged by fire and water in engine-house on ground-floor.	M.F.B., with buckets of water.
"	6 20 p.m.	6 24 p.m.	21, Andreas-street, Petersham	Sarah Grayer	Private dwelling	Weatherboard, with iron roof.	Candle	None	Australian Mutual, £250.	A cottage of five rooms; three back rooms severely damaged by fire and water, two front rooms damaged by heat and smoke.	M.F.B., with one hydrant.
Saturday, 1 June.	1 48 p.m.	1 51 p.m.	*George and Essex streets, City.	Mrs. Napier	Licensed victualer.	Brick, with slate roof.	"	Unknown	Unknown	Window curtains and a small portion of furniture in back room on ground floor slightly damaged by fire and water.	Inmates, with buckets of water.
Monday, 3 June.	8 2 p.m.	8 9 p.m.	55, Talfourd-street, Glebe.	D. Brodie	Private dwelling	Brick, with iron roof.	"	None	"	Bed and bedding in front bedroom on first floor slightly damaged by fire and water.	"
Wednesday, 5 June.	1 0 a.m.	None rec'd.	71, Darlington-road, Darlington.	Minahan and Colgan	Stables	Wood, with iron roof.	Burning rubbish	"	None	A small portion of wooden partition in stable damaged by fire.	Neighbours, with buckets of water.
Wednesday, 5 June.	5 35 a.m.	5 40 a.m.	61, Paddington street, Paddington	T. P. O'Brien	Private dwelling	Brick, with iron roof.	Candle	"	Mercantile Mutual, £500.	Ceiling, doors, and furniture in front bedroom on first floor severely damaged by fire and water.	Paddington Vol. F. Coy., with one hydrant.
"	2 20 p.m.	2 24 p.m.	Swan-street, City	E. Danglade	"	Brick, with shingle roof.	Spark from chimney.	"	Unknown	A small portion of shingle roof damaged by fire and cutting away.	M.F.B., with buckets of water.
Thursday, 6 June.	6 35 p.m.	6 37 p.m.	167, Campbell-street, Surry Hills.	M. Myers	"	Brick, with slate roof	Unknown	"	Colonial Mutual, £600.	Bed and bedding in front bedroom on first floor damaged by fire, and contents of ground floor damaged by fire and smoke.	Inmates, with buckets of water.
"	9 25 p.m.	9 30 p.m.	Old South Head Road, Waverley	T. Holt	General dealer	Wood, with iron roof.	Boiling over of tallow.	"	Australian Mutual, £700	A cottage of two rooms and shed adjoining burned out and fallen down.	Waverley & Woollahra Vol. Fire Coys., with one hydrant.
Friday, 7 June.	5 45 a.m.	None rec'd.	381, King-street, Newtown.	Mills Bros.	Butchers	Brick, with iron roof.	Unknown	"	Unknown	Kitchen and contents on ground floor damaged by fire and water.	Inmates, with buckets of water.
"	12 52 p.m.	12 57 p.m.	Glebe Point Road, Glebe	Glebe Council	Paddock	"	Tar boiling over	"	None	A quantity of tar and a small portion of fencing damaged by fire.	Employees and Glebe Vol. Fire Coy., with buckets of sand and one hydrant.
Sunday, 9 June.	8 50 a.m.	None rec'd.	Carrington Road, Waverley.	Mrs. Waldron	Private dwelling	Brick, with iron roof.	Candle	"	Norwich Union, £300.	Window curtain burned in front room on ground floor	Inmates, with buckets of water.
"	7 47 p.m.	7 47 p.m.	Bathurst and Castle-rough Streets, City.	W. Brown, "Royal Standard Hotel."	Licensed victualer	Brick, with slate roof.	"	City Mutual, £500	Unknown	Bed and bedding in front bedroom on second floor slightly damaged by fire.	"
Tuesday, 11 June.	5 55 p.m.	5 56 p.m.	28, Fulham-street, Enmore.	E. Evans	Private dwelling	Brick, with iron roof.	"	None	Aust. Mutual, £1,000.	Contents of front room on ground floor damaged by fire and water.	"
Wednesday, 13 June.	9 23 p.m.	9 31 p.m.	† Liverpool	Collingwood Wool-scouring Co., Pickersgill, manager.	Drying-shed	Brick, with iron roof.	Spontaneous ignition.	Imperial Ins. Coy	Imperial Ins Coy.	A two-storied building, used as a drying-shed, with machinery and contents, burned out and fallen down.	Neighbours, with private hose.
Friday, 14 June.	1 30 a.m.	None rec'd.	† Church Point, near Manly.	Carl Liebrand	Private dwelling	Weatherboard with iron roof.	Unknown	Mercantile Mutual, £75.	Mercantile Mutual, £150.	A cottage of six-rooms, with contents, burned out and fallen down.	Burned itself out

\* Previous fire, 10th December, 1892.

† Outside M.F.B. area.

DETAILS of Fires which have occurred within the Metropolitan District—continued.

Date	When discovered.	Time of call.	Locality.	Name of tenant.	How premises occupied.	Construction of premises.	Origin or supposed cause of fire.	Insurances.		Extent of damage, &c.	Extinguished by
								Contents.	Building.		
Friday, 14 June.	6 30 p.m.	6 32 p.m.	8, Alma-street, Darlington	N.S.W. Government	Post Office	Brick, with slate roof.	Light thrown down.	None	Unknown	Office and contents slightly damaged by fire and water	Neighbours, with buckets of water
Saturday, 15 June.	6 45 a.m.	8 7 a.m.	"Kenton," Liverpool Road, Ashfield	H.C. Pilcher	Stables	Weather-board, with iron roof.	Unknown	"	"	A building about 30 feet x 14 feet, used as coach-house and stable, with contents, burned out and fallen down.	Burwood Vol. Fire Coy., with one hydrant.
"	7 40 p.m.	7 42 p.m.	20, Brumby-street, City	James Dwyer	Private dwelling	Brick, with iron roof.	Matches, carelessness with.	"	"	A quantity of wearing apparel damaged by fire in back bedroom on first floor.	Inmates and neighbours, with buckets of water.
Sunday, 16 June.	1 48 a.m.	1 51 a.m.	133, King-street, Newtown	E. Payne	Confectioner	"	Spark from another fire.	Imperial Ins. Co., £500.	"	A portion of flooring and stock in shop on ground floor damaged by fire and water.	M.F.B., with one hydrant.
"	2 12 a.m.	2 17 a.m.	Burton street, City	Unoccupied	Private dwelling	"	Light thrown down.	None	Alliance, £300	A portion of staircase on ground floor damaged by fire	M.F.B., with one hydrant.
Thursday, 20 June.	11 18 p.m.	11 20 p.m.	Morrell-street, Wool-lahra.	G. Smith	"	"	Kerosene lamp, upsetting of.	"	Unknown	Front bedroom on first floor and contents severely damaged by fire and water.	Woollahra V.F. Co., with hydrant.
Saturday, 22 June.	10 28 a.m.	10 30 a.m.	Parraquetta Road, Forest Lodge.	L. Blackmore	Painter	Weather-board, and iron roof.	Furnace, overheating of.	Unknown	"	A small quantity of hair felting slightly damaged by fire on first floor, used as drying-rooms, and a small portion of roofing damaged by fire.	M.F.B., with buckets of water.
"	9 27 p.m.	10 32 p.m.	Wilson's Creek, Lane Cove	W. W. Whatmore	Boiling-down works.	Wood, with iron roof	Unknown	Building and contents, Mercantile Mutual, £500.	"	A building, about 40 x 100 ft., with contents, consisting of tallow and bone-dust, burnt out and fallen down.	Burned itself out.
Thursday, 27 June.	12 45 a.m.	12 50 a.m.	320, Sussex-street, City	Alfred Wilson	General dealer	Brick, with iron and shingle roof	Incendiarism	Austrian Mutual, £300.	Austrian Mutual, £500.	Back room in basement burned out, stairs to ground floor destroyed by fire; rest of building and contents severely damaged by fire and heat, about 6 x 6 ft. of roofing damaged by fire and cutting away.	M.F.B., with one hydrant, assisted by N.C.V.F. Co.
Saturday, 29 June.	10 45 p.m.	None rec'd.	114, Campbell-st., City.	Charles Carrick	Private dwelling.	Brick, with iron roof.	Candle	Unknown	Unknown	Bedding in front room on first floor destroyed by fire.	Inmates, with buckets of water.
Sunday, 30 June.	9 15 p.m.	9 16 p.m.	Pitt and Bridge Streets, City	Charles Ricketts, "Exchange Hotel."	Licensed victualer	Brick, with slate roof.	"	Commercial Union, £200.	"	A small quantity of wearing apparel burned, and dressing table slightly damaged by fire in bedroom on roof.	"
Monday, 1 July.	9 a.m.	None rec'd.	137 and 139 Regent-st., Redfern.	E. and H. Davey	Butchers	"	Smoking meat	None	"	A quantity of meat in cask at rear of premises damaged by fire.	"
Tuesday, 2 July.	12 26 a.m.	12 28 a.m.	327-331 George-st., City	J. F. Ashwood	Grocer	Brick, with iron roof.	Burning rubbish.	"	"	A quantity of rubbish burned in yard at rear of premises	M.F.B., with buckets of water
Wednesday, 3 July.	11 50 a.m.	11 42 a.m.	139, Princess street, City	George Moritz	Boarding-house.	"	Unknown	Phoenix, £150	"	Basement and contents severely damaged by fire and water, staircase to first floor destroyed; rest of house and contents severely damaged by heat and smoke	N.C.V.F. Co., assisted by M.F.B., with two hydrants
"	7 50 p.m.	7 57 p.m.	18, Chandos-street, Ashfield.	Mrs. Wickham	Private dwelling.	Brick, with slate roof	"	Victoria	Victoria	Contents of attic bedroom damaged by fire and water; ceiling under damaged by water.	Inmates and neighbours, with buckets of water.
Thursday, 4 July.	3 38 p.m.	3 43 p.m.	106, Clarence-street, City	Louis Russell	"	Weather-board, with iron roof	Spark from chimney.	None	Unknown	A small portion of lining-boards in kitchen, on ground floor, damaged by fire.	Inmates and police, with buckets of water.
Friday, 5 July.	12 30 a.m.	12 39 a.m.	Carr-street, Randwick.	Thomas Pierce	"	"	Unknown	Buildings and contents, Commercial Union, £100.	"	A cottage of three rooms, with contents, burned out and fallen down	Randwick Vol. Fire Co., assisted by other Vol. F. Co's
"	11 10 p.m.	11 16 p.m.	Lincoln-street, Marrickville	A. W. Patchet	Smoke-house	"	Overheating	None	Unknown	A shed, 6 x 4 ft., with contents, burned out and fallen down; a small portion of fencing at end of shed, damaged by fire.	Inmates and M.F.B., with buckets of water
Saturday, 6 July.	12 14 p.m.	12 15 p.m.	"Carthana," Darling Point Rd., Woollahra.	W. E. Mitchell	Private dwelling.	Stone, with slate and shingle roof.	Spark from chimney.	Commercial Union.	Commercial Union.	About 20 x 8 ft. of shingle roof damaged by fire and cutting away.	Woollahra, Paddington, and M.F.B., with buckets of water.
"	6 30 p.m.	6 34 p.m.	80, Surrey-street, Darlinghurst.	Mrs. Roper	"	Brick, with slate roof.	Candle	None	Unknown	Bed and bedding in back room on ground floor slightly damaged by fire.	Inmates, with buckets of water.
"	10 p.m.	10 3 p.m.	135, Mullins-street, Balmain	Lidia Tuff	Grocer	Weather-board, with iron roof.	Kerosene lamp, upsetting of	City Mutual, £35	City Mutual, £170	Shop and dwelling on ground floor, with contents burned out; two bedrooms on first floor severely damaged by fire.	Balmain Vol. Fire Co., assisted by M.F.B., with two hydrants
"	"	"	113, Mullins-street, Balmain.	J. W. Richie	Private dwelling.	"	"	None	Unknown	Gable end of roof severely damaged by fire; furniture damaged by removal	"
Sunday, 7 July.	2 5 a.m.	None rec'd.	Bay-street, Rockdale	W. Ogden	Stable	"	Unknown	"	None	Stable slightly damaged by fire	Rockdale Vol. F. Co., with buckets of water
Monday, 8 July.	5 31 p.m.	5 43 p.m.	New Canterbury Road, Marrickville.	G. F. Darton	Private dwelling.	Brick, with shingle roof	Candle	United Insurance Company, £500.	Unknown	Contents of front bedroom on first floor slightly damaged by fire and water.	Inmates and M.F.B., with buckets of water.
Tuesday, 9 July.	1 15 p.m.	1 20 p.m.	Punch Park, Worthy-street, Balmain.	Municipal Council	Park	"	Burning rubbish	None	None	A small portion of fencing damaged by fire and cutting down.	Balmain Vol. F. Co., with buckets of water.
"	11 52 p.m.	11 56 p.m.	Alma-street, off Edward-street, Pyrmont	Saunders & Co.	Carriers	Wood, with iron roof.	Unknown	Commercial Union, £450.	Commercial Union, £300.	A shed building of one and two floors, about 300 x 60 ft., containing a quantity of furniture, harness, fodder, &c.; most part burned out and fallen down.	M.F.B., with three steam fire engines, assisted by several Vol. Fire Cos.
"	"	"	"	"	"	Brick, with iron roof.	"	Norwich Union, £4,000.	"	A warehouse of two floors, about 120 x 60 ft., containing a large quantity of furniture, &c.; side floors burned out, and contents damaged by fire and water.	"
"	"	"	72, Pyrmont-street, Pyrmont.	Robert Thilthorpe	Private dwelling.	"	"	None	"	Back-room window on ground floor and furniture damaged by water; all adjoining and communicating.	"

\* Alfred and George Wilson were charged at Central Police Court with setting fire to the premises, and both men were committed for trial at Central Criminal Court. 16th August, 1895.—The jury failed to come to a verdict, both prisoners remanded to a future Court. 14th October, 1895.—Both prisoners were again put on trial at the Central Criminal Court, when they were found guilty, and each sentenced to four years' imprisonment.  
 † Previous fire, 11th April, 1894. ‡ Matilda Rickards, aged 23 years, severely burned about the legs, and taken to Balmain Cottage Hospital.

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DETAILS of Fires which have occurred within the Metropolitan District—continued.

Date.	When discovered.	Time of call.	Locality.	Name of tenant.	How premises occupied.	Construction of premises.	Origin or supposed cause of fire.	Insurances.		Extent of damage, &c.	Extinguished by
								Contents.	Building.		
Sunday, 14 July.	6.42 p.m.	6.45 p.m.	Albion-street, Annandale.	Richard O'Donnell	Stable	Weatherboard, with iron roof.	Unknown	None	None	A quantity of straw and a set of harness damaged by fire in stable at rear of premises.	Inmates and M.F.B., with buckets of water.
Monday, 15 July.	12.20 a.m.	12.34 a.m.	Ann street, Enfield	T. H. Leslie	Dairyman	Wood and brick, with iron roof.	"	Australian Mutual, £50.	Commercial Union, £200.	A cottage of five rooms two front rooms burned out and fallen down; three back rooms and contents severely damaged by fire and water.	Burwood Vol. Fire Co., assisted by M.F.B., with one hydrant
"	12.40 a.m.	12.45 a.m.	*Off Lime street, the Harbour.	S.S. "Victoria," Captain Saunders.	Iron	"	"	Unknown	Unknown	A small portion of deck cargo damaged by fire.	Crow, with donkey engine.
"	6.23 a.m.	6.25 a.m.	*Off Pyramont Wharf, the Harbour.	Hulk, "Sir William Wallace."	Wood	"	"	"	"	Cabin, stove-rooms, and after-part of hull, together with after-part of upper deck, damaged by fire.	M.F.B., with one steam fire engine
"	8.55 a.m.	9.0 a.m.	Maquarie-place, Balmain.	Grass paddock.	"	"	Burning rubbish.	None	None	A small portion of fencing burned	Balmain Vol. Fire Co., with buckets of water.
"	11.55 a.m.	12.0 noon	Underwood street, Paddington.	Stephen Wheelan	Stable	Weatherboard, iron roof.	Unknown	"	"	A small portion of stable damaged by fire	Inmates, with buckets of water.
"	2.7 p.m.	2.10 p.m.	Pitt-street, City	Benevolent Asylum	Yard	"	Boiling over, tar	"	"	A small quantity of tar destroyed by fire in open yard	Inmates, with sand.
"	4.35 p.m.	4.40 p.m.	Marlborough-street, Drummond.	— Saunders	Private dwelling.	Brick, with iron roof.	Burning rubbish.	"	Unknown	A small portion of fencing damaged by fire in yard at rear of premises	Drummond Vol. Fire Co. with one hydrant.
Tuesday, 16 July.	8.30 p.m.	None rec'd.	George and Bridge Streets, City.	John Donnison, "Metropolitan Hotel."	Licensed victualler.	Brick, with slate and iron roof.	Candle	United Insurance Co., £400.	"	A small portion of furniture in front room on first floor slightly damaged by fire.	Inmates, with buckets of water.
Saturday, 20 July.	11.5 p.m.	"	1, Goulburn street, City	Boo Key	Grocer	Brick, with iron roof.	Unknown	None	"	A small portion of lining-boards under staircase damaged by fire.	Inmates and police, with buckets of water.
Sunday, 21 July.	9.35 p.m.	9.25 p.m.	408-500, Kent-street, City.	Edward Murphey	Boarding-house.	"	Defect in hearth.	"	"	Fire-place in front room on first floor damaged by fire, and about 5 x 5 ft. of ceiling in room underneath fallen down.	M.F.B., with buckets of water.
Monday, 22 July.	11.40 a.m.	11.45 a.m.	07, Albion-street, Annandale.	Unoccupied	Private dwelling.	Weatherboard, with iron roof.	Unknown	"	"	Middle room of cottage damaged by fire and heat; roof damaged by fire and cutting away.	M.F.B., with one hydrant.
"	"	"	99, Albion-street, Annandale.	Lucy Jesse	Laundress	"	"	"	"	A cottage of three rooms; two front rooms with contents damaged by fire and water.	"
"	11.5 p.m.	11.10 p.m.	317-319, Kent-street, City	Thomas Robinson & Co.	Engineers	Brick, with iron roof.	"	Imperial Ins. Co., £2,550.	"	Five cases of machinery damaged by fire on ground floor.	"
Tuesday, 23 July.	2.20 a.m.	2.31 a.m.	Brussel street, North Botany.	Unoccupied	Private dwelling.	Weatherboard, iron roof.	"	None	Mercantile Mutl., £300.	Two cottages burnt out and fallen down	North Botany Vol. F. Co., assisted by other V. F. Cos. and M.F.B., with one hydrant.
"	9 p.m.	None rec'd.	Malcolm-lane, off George-street, City.	Henry Proudfoot	Builder and contractor.	Stone and iron, with iron roof.	Incendiarism	Norwich Union, £150	Unknown	A small quantity of timber and other articles burned, in workshop on ground floor.	Burned itself out.
"	12.18 p.m.	12.19 p.m.	120, Figg-street, Pyramont.	Charles Cross	Baker	Brick, with shingle roof.	Spark from chimney.	None	"	A small portion of shingle roof damaged by fire and cutting away.	M.F.B., with buckets of water.
Monday, 29 July.	1.0 a.m.	None rec'd.	Fair-street, Rockdale.	R. Kerr	Jeweller	Weatherboard, with iron roof.	Kerosene lamp, upsetting of.	South British, £25.	South British, £125.	A cottage of four rooms with contents, burned out and fallen down	Rockdale Vol. Fire Co., with two hydrants.
"	5.0 p.m.	5.5 p.m.	Fullerton-street, Woollahra.	W. H. Rocho	Private dwelling.	Brick, with shingle roof.	Spark from chimney.	United Insurance Co.	Unknown	A small portion of shingle roof damaged by fire and cutting away.	Woollahra Vol. Fire Co., assisted by inmates, with buckets of water.
Tuesday, 30 July.	2.39 a.m.	2.41 a.m.	87, St. John's Road, Forest Lodge.	George Robertson	"	Brick, with iron roof.	"	Building and contents, North Queensland, £500.	"	A small portion of ceiling and a quantity of firewood and wearing apparel damaged by water.	M.F.B., with buckets of water.
Thursday, 1 August.	3.39 a.m.	None rec'd.	Silver Water, Auburn	Ah Moo	Shed	Wood, with iron roof.	Unknown	None	Unknown	A shed used as dwelling burned out and fallen down	Burned itself out.
"	1.14 p.m.	1.17 p.m.	Liverpool and Kent Streets, City.	F. Mulley & Co.	Iron-workers	Brick, with iron roof.	Spark from chimney	Unknown	"	Workmen's bench in yard at rear of premises damaged by fire.	Employees, with buckets of water.
"	4.17 p.m.	4.19 p.m.	Darling Point Road, Woollahra.	Park land.	"	"	Light thrown down	None	None	About 20 ft. of fencing damaged by fire	Woollahra Vol. Fire Co., with buckets of water.
Saturday, 3 Aug.	11.25 a.m.	11.31 a.m.	5, John-st., Leichhardt.	Unoccupied	Private dwelling.	Weatherboard, with iron roof.	Careless use of matches.	"	Unknown	A cottage of three rooms; walls and ceiling of front room damaged by fire.	M.F.B., assisted by Leichhardt Vol. F. Co., with one hydrant.
"	1.30 p.m.	1.32 p.m.	Carlton Crescent, Ashfield	Capt Craig	"	Weatherboard, and iron roof.	"	Unknown	"	A small portion of fencing at rear of premises damaged by fire.	M.F.B., assisted by neighbours, with buckets of water.
"	6.17 p.m.	6.19 p.m.	Landers-street, Redfern	Amelia Pitt	"	Weatherboard, with iron roof.	Kerosene lamp, upsetting of	None	None	About 2 feet of wooden partition in front bedroom on ground floor damaged by fire.	Inmates, with buckets of water.
Tuesday, 6 Aug.	3.11 a.m.	3.14 a.m.	60, Rose-st., Leichhardt.	Mrs. Zeitch	General store	"	Hot ashes	"	Unknown	A quantity of rubbish burned in yard at rear of premises.	"
"	8.10 p.m.	8.16 p.m.	Watson-street, Bondi	Mrs. Egerton	Private dwelling.	Brick, with slate roof.	Light thrown down.	Merc'ile Mutual, £50.	"	Front bedroom on ground floor damaged by fire and water.	Waverley Vol. F. Co., with buckets of water.
Thursday, 8 Aug.	3.0 a.m.	None rec'd.	223 Forbes-street, Darlinghurst.	W. E. French	"	Brick, and slate roof.	Candle	None	Merc'ile Mutual, £500.	Wall, ceiling, windows, and contents of front bedroom on first floor damaged by fire and water; ceiling of front room on ground floor damaged by fire.	Inmates, with buckets of water.
Sunday, 11 Aug.	2.5 a.m.	2.8 a.m.	Barncluth Square, Elizabeth Bay Road.	The Hon. Dr. Garran	"	Brick, with iron roof.	Unknown	Commercial Union, £300.	Liverpool, London, and Globe.	Dining-room on ground floor with contents severely damaged by fire and water.	Paddington V. F. Co., assisted by M.F.B. and other V. F. Cos., with one hydrant.

\* Outside M.F.B. area.

† Previous fire, 4th January, 1895.

‡ Previous fire, Monday, 26th November, 1894.

DETAILS of Fires which have occurred within the Metropolitan District—continued.

Date.	When discovered.	Time of call.	Locality.	Name of tenant.	How premises occupied.	Construction of premises.	Origin or supposed cause of fire.	Insurances.		Extent of damage, &c.	Extinguished by
								Contents.	Building.		
Sunday, 11 Aug.	1:16 p.m.	1:20 p.m.	274 to 280, Elizabeth-street, City.	J. P. Wright & Co. ....	Boot factory ..	Brick with iron roof.	Unknown .....	Mercantile Mutual, £10,000.	Mercantile Mutual, £6,000.	A range of buildings of four floors, 80 x 100 ft. Top floor burned out, and roof off; second floor very severely damaged by fire and water; first and ground floors very severely damaged by water.	M.F.B., with six steam fire engines and one hydrant, assisted by several Vol. Fire Companies.
"	"	"	272, Elizabeth-street ..	E. Carleton .....	Boarding-house ..	Brick with slate roof.	" .....	Unknown .....	Unknown .....	Contents of back portion of building damaged by water ..	" ..
"	"	"	281, Elizabeth-street ..	Sun Tiy Loong & Co ..	Cabinetmakers ..	Brick with iron roof.	" .....	None .....	" .....	A building of two floors used as a dwelling and workshop; contents damaged by water	" ..
Monday, 12 August.	6:51 p.m.	6:53 p.m.	223, New South Head Road, Woollahra.	E. Barry .....	Plumber .....	" .....	Gas bracket .....	Com. Union, £300	Alliance .....	Window curtains in front bedroom damaged by fire .....	Inmates with buckets of water
Wednesday, 14 August.	7:22 p.m.	7:26 p.m.	7, Wilson-lane, Redfern	John Dalton .....	Private dwelling..	" .....	Candle .....	None .....	Unknown .....	Window curtain in front sitting-room on ground floor damaged by fire	" ..
Thursday, 15 August.	7:32 p.m.	7:34 p.m.	72, Botany-street, Redfern	William O'Conner .....	" .....	" .....	" .....	" .....	" .....	A small quantity of bedding in front bedroom on first floor damaged by fire	" ..
Sunday, 18 August.	8:30 p.m.	None rec'd.	117, Goulburn-street, City.	John Lyons .....	" .....	Brick with slate roof.	Hearth, defects in.	" .....	" .....	A small portion of skirting-board adjoining fire place in back room on ground floor, damaged by fire.	" ..
Monday, 19 August.	12:10 a.m.	12:14 a.m.	Portman street, Waterloo.	Jos. Flatter .....	Stables ..	Weatherboard with iron roof.	Unknown .....	" .....	" .....	A loft over stable in rear of premises, containing a quantity of fodder, severely damaged by fire.	Waterloo Volunteer Fire Co. assisted by M.F.B., with one hydrant,
"	8:10 a.m.	None rec'd.	Bellevue-street, Kogarah.	— Young .....	Fernery ..	Wood and glass	" .....	" .....	None .....	A fernery at rear of premises damaged by fire ..	Kogarah Volunteer Fire Co., with one hydrant.
Tuesday, 20 August.	9:14 a.m.	9:15 a.m.	53, George street West.	David Rosen .....	Bootmaker ..	Brick with iron roof.	Spark from chimney	" .....	Unknown ..	A quantity of rubbish and ice chest in yard at rear of premises damaged by fire.	M.F.B., with buckets of water
Wednesday, 21 August.	1:11 a.m.	None rec'd.	232, Telopia-street, Redfern	Henry Gibb* .....	Private dwelling..	" .....	Candle .....	" .....	" .....	Bedding, window curtains, a quantity of wearing apparel, and contents of bedroom on first floor damaged by fire.	Inmates and police, with buckets of water.
"	11:33 a.m.	11:38 a.m.	Bonnet-street, Bondi	Holdsworth, McPherson & Co	Soap factory ..	Weatherboard with iron roof.	Resin boiling over.	Unknown .....	" .....	A shed about 35 x 20 ft., 8 ft. of roofing damaged by fire ..	Inmates, with buckets of water.
"	3:20 p.m.	3:24 p.m.	John-street, Annandale	Unoccupied .....	Private dwelling.	" .....	Unknown .....	None .....	" .....	A cottage of three rooms burned out and fallen down ..	Leichhardt V.F. Co., assisted by M.F.B., with one hydrant.
Thursday, 22 August.	3:46 a.m.	3:49 a.m.	Mul-stream, Johnstone's Bay (The Harbour.)	S.S. "Victorian" .....	No cargo ..	Iron ..	" .....	" .....	Commercial Union, £4,500; S. British, £4,500—£9,000.	Saloon and cabins nearly burned out; rest of ship very severely damaged by fire, heat, smoke, and water .....	M.F.B., with one steam fire engine, assisted by tug, "Reliance," with donkey pump, and pilot boat, "Captain Cook," with fire pump
"	"	"	"	S.S. "Emu" .....	" ..	" ..	" ..	" ..	Commercial Union, £3,500; S. British, £3,500—£7,000	Tween decks and port side of ship very severely damaged by fire; rest of ship damaged by heat, smoke, steam, and water	" ..
"	6:8 p.m.	6:19 p.m.	Doncaster Avenue, Kensington.	.....	Paddock ..	.....	Light thrown down.	" ..	None ..	A small quantity of grass, fencing, and a few pine logs damaged by fire	Woollahra V.F. Co., with one hydrant
Friday, 23 August.	11:29 p.m.	11:24 p.m.	303, King-street, Newtown	R. J. Geddes .....	Butcher ..	Weatherboard, with iron roof.	Unknown .....	Imperial, £100	Unknown .....	A store-room on ground; contents slightly damaged by fire and water, and about 3 x 3 ft. of partition also damaged by fire.	M.F.B., with hand pump.
Saturday, 24 August.	1:15 p.m.	1:20 p.m.	104, Elliott-street, Balmain.	E. P. Estmure .....	Private dwelling.	Stone, with shingle roof	Burning grass ..	None .....	Aus. Mut., £700.	A quantity of grass and a portion of fencing in garden adjoining premises destroyed by fire.	Balmain V.F. Co., with one hydrant.
Sunday, 25 August.	12:16 p.m.	12:15 p.m.	Belle View Hill, Woollahra.	Mark Foy .....	" ..	Brick, with tiled roof	Burning rubbish	Unknown .....	Unknown ..	Verandah of house and wooden grating on lead flat slightly damaged by fire.	Woollahra V.F. Co., assisted by Waverley V.F. Co., with one hydrant.
"	1:25 p.m.	1:27 p.m.	Railway yard, Lavender Bay.	Railway Department ..	Yard ..	Yard ..	" ..	None .....	None .....	A quantity of timber in yard destroyed by fire.	M.F.B., with one hydrant.
"	3:18 p.m.	3:20 p.m.	Lane Cove Road ..	.....	Grass paddock.	.....	Burning grass ..	" ..	" ..	A quantity of grass, several trees, and a portion of fencing damaged by fire.	" ..
"	6:13 p.m.	6:15 p.m.	Terminus-street, City ..	B. Callus .....	Fruiterer ..	Brick, with slate roof.	Candle ..	" ..	Unknown ..	Curtain in front bedroom on first floor damaged by fire .....	Inmates, with buckets of water
"	11:24 p.m.	11:30 p.m.	Lord's Estate, North Botany	.....	Building in course of erection	.....	Burning grass ..	" ..	None .....	A few joists and other building materials damaged by fire ..	North Botany V.F. Co., with one hydrant
"	11:10 p.m.	11:38 p.m.	Off Terry-street, Ealingham	J. Russell (Secretary) ..	Boat-shed ..	Weatherboard, with iron roof	Unknown ..	Building and contents. Mercantile Mutual, £195.	.....	A boat-shed, about 18-ft. x 25-ft., containing two boats with sails and fittings, burned out and fallen down.	Balmain V.F. Co., assisted by M.F.B., with one hydrant.
Monday, 26 August.	11:47 p.m. (24th.)	12:1 a.m.	26, Thornley-street, Leichhardt.	W. G. Pierce .....	Private dwelling.	" ..	Light thrown down.	None .....	Australian Mutual, £200.	Kitchen burned out, roof partly off, two back rooms and contents severely damaged by fire, and two front rooms damaged by smoke and heat.	Leichhardt Vol. Fire Co., assisted by M.F.B., with two hydrants.
"	"	"	28, Thornley street ..	J. Morecraft .....	" ..	" ..	" ..	Building and contents. Atlas, £400.	Unknown .....	Roof and ceilings of back rooms slightly damaged by fire and water.	" ..
"	"	"	21, Thornley-street, Leichhardt.	Annie Brown .....	" ..	" ..	" ..	None .....	Unknown .....	Back rooms and contents damaged by fire; furniture damaged by removal.	" ..

\* Henry Gibb severely burned about the hands, sent to Prince Alfred Hospital for treatment. † Outside M.F.B. area.

DETAILS of Fires which have occurred within the Metropolitan District—continued.

Date.	When discovered	Time of call.	Locality.	Name of tenant.	How premises occupied.	Construction of premises.	Origin or supposed cause of fire.	Insurances.		Extent of damage, &c.	Extinguished by
								Contents.	Building.		
Monday, 26 August	11-12 a.m.	11-15 a.m.	17, Bradford-street, Balmain.	Mrs. Ellis	Private dwelling.	Wood, with iron roof.	Foul chimney	None	Unknown	A small portion of shingle roof damaged by fire and cutting away.	Inmates, with buckets of water.
"	1-50 p.m.	1-51 p.m.	Trafalgar-street, Stanmore.	Railway Department Yard.		Yard	Spark from chimney	"	None	A quantity of grass burned, and about 30 feet of fencing damaged by fire and cutting away.	M.F.B., with buckets of water.
"	2-58 p.m.	3-0 p.m.	Rear of 92, Darlinghurst-road.	J. Virarelli	Stables	Wood and iron, with iron roof	"	Australian Mutual	Australian Mutual	A stable, about 10 x 16 feet, and contents burned out and fallen down; a cart severely damaged by fire.	Paddington Brewery Vol. Fire Co., assisted by M.F.B., with one hydrant.
"	3-32 p.m.	3-35 p.m.	12, Washington-street, City	Unoccupied	Private dwelling.	Brick, with shingle roof.	Spark from chimney.	None	Unknown	A portion of shingle roof damaged by fire and cutting away.	M.F.B., with one hydrant.
"	"	"	14, Washington-street.	Alfred Quinton	"	"	"	"	"	Back portion of premises damaged by water	"
"	"	"	16, Washington-street.	James Lambert	"	"	"	"	"	A portion of shingle roof damaged by fire and cutting away, rooms under damaged by water.	"
"	8-52 p.m.	8-56 p.m.	Victoria-street, Paddington.	— Falkner	Stables	Wood, with iron roof.	Unknown	Unknown	"	A stable, about 15 x 20, slightly damaged by fire	Paddington V.F. Co., with buckets of water.
Tuesday, 27 August	2-40 p.m.	2-45 p.m.	Greenwich-road, Greenwich.	J. Doencie	"	"	Matches, children playing with.	None	None	Stable, fodder-house, cow-shed, and contents burned out and fallen down.	M.F.B., with one hydrant.
"	3-30 p.m.	3-45 p.m.	South Head	J. C. Cameron	Private dwelling.	Weatherboard, with shingle roof.	Burning grass	United	Unknown	Roof of cottage slightly damaged by fire	Neighbours, with buckets of water.
"	"	"	"	— Kellick.	"	"	"	Unknown	"	"	"
"	3-40 p.m.	3-46 p.m.	Cook's River Road, St. Peters	Thomas Barlow	Hairdresser	Wood, with iron roof.	Kerosene-lamp upsetting.	None	"	A shed, used as hairdresser's shop, about 3 feet lining boards and ceiling damaged by fire.	"
"	6-45 p.m.	6-47 p.m.	21, Napier-street, Paddington.	Annie Neville	Boarding house	Brick, with slate roof.	Matches, careless use of.	"	"	Contents of attic bedroom damaged by fire and water	Paddington Brewery Vol. F. Co., with one hydrant
Wednesday, 28 August	9-45 a.m.	None rec'd.	Marickville Road, Marickville	Unoccupied	Private dwelling.	Brick, with iron roof.	Unknown	"	"	A shed in yard at rear of premises slightly damaged by fire	Police and neighbours, with buckets of water.
"	3-7 p.m.	3-12 p.m.	Fenley Avenue, North Sydney.	E. A. C. Smith	Paddock	"	Light thrown down.	"	None	A large quantity of grass, bush, etc., destroyed by fire, and a stable in rear of premises, a quantity of fodder, and about 20 feet of fencing burned out and fallen down.	M.F.B., with manual engine.
"	3-15 p.m.	3-55 p.m.	Gerard-street, Mosman	G. Pennyworth	Stables	Wood and iron, with iron roof.	Unknown	"	"	A shed about 10 ft. x 12 ft., used as fowl house, and about 10 feet of fencing burned out and fallen down.	Inmates, with buckets of water.
"	"	"	"	J. Knowles	Shed	"	"	"	"	A shed, about 10 ft. x 5 ft., used as store-room, with contents, slightly damaged by fire.	"
"	4-1 p.m.	4-3 p.m.	77, Mort-street, Balmain	Janus Rodgers	"	Wood, with iron roof.	"	"	"	A small portion of palings and a quantity of straw burned in stable	Balmain Vol. Fire Co., with one hydrant.
"	11-14 p.m.	None rec'd.	Talford-lane, Glebe	William Boyd	Stable	Wood and iron.	Spark from chimney.	"	"	About 30 bales of straw damaged by fire in back basement.	Neighbours, with buckets of water.
Thursday, 29 August	10-38 a.m.	10-40 a.m.	156, Oxford-street, Paddington.	Michael Moloney	Produce merchant	Stone and brick, with slate roof.	Unknown	Northern, £300	Unknown	A cottage of six rooms burned out and fallen down	Paddington Brewery Vol. Fire Co., assisted by M.F.B., with one hydrant.
"	10-0 a.m.	None rec'd.	Rodgers-street, Belmore	T. Scullin	Private dwelling.	Weatherboard, with iron roof.	"	None	None	A quantity of shelving and side of workshop damaged by fire.	M.F.B., with one hydrant.
Saturday, 31 August	3-42 a.m.	3-45 a.m.	Patent Slip Wharf, off Lime street, City.	R. L. Norman	Engineer	Wood, with iron roof	Hot ashes	"	Unknown	Bed and bedding burned in back room on first floor; lining of staircase damaged by fire.	Standard Brewery Vol. Fire Co., with hand pump.
"	9-50 a.m.	9-54 a.m.	38½, Mary-street, City	Edward Hughes	Grocer	Brick, with iron roof.	Spark from chimney.	"	None	A quantity of grass burned	Neighbours, with buckets of water.
"	5-29 p.m.	5-27 p.m.	Rosebury-street, Drummoyne.		Paddock.	"	Unknown	"	"	M.B.F., assisted by Leichhardt Vol. Fire Co., with two hydrants	
"	7-43 p.m.	7-45 p.m.	67 and 69, Yule-street, Petersham.	John McNeil	Builder	Wood and iron, with iron roof	"	Com. Union, £40	Com. Union, £60	A workshop of two floors, about 38 ft. x 18 ft., top floor and contents damaged by fire; roof partly off; contents of ground floor damaged by fire and water.	M.F.B., assisted by Leichhardt Vol. Fire Co., with hand-pump.
Sunday, 1 September	3-15 a.m.	3-25 a.m.	Moore-st., Leichhardt	William Sager	Plumber	Wood, with iron roof.	"	Building and contents, Commercial Union, £100.	"	A shed, 12 ft. x 14 ft., used as stable and coach-house, containing sulky, harness, and fodder, burned out and fallen down.	"
"	3-15 a.m.	3-25 a.m.	"	Edwin Bishop	Private dwelling	"	"	None	Mert. Mutual, £70	Out-house at rear of premises burned out and fallen down, and a portion of fencing damaged by fire.	"
Tuesday, 3 September	12-58 a.m.	1-59 a.m.	Off Botany Road, Botany.	Scarl & Son	Stables	"	"	"	None	A stable, 24 ft. x 14 ft., with contents, consisting of cart, three sets of harness, and a small quantity of fodder, burned out and fallen down.	North Botany Vol. Fire Co., with sand.
"	5-30 a.m.	8-55 a.m.	George-st., Parramatta	M. King	Shed	Wood, with shingle roof.	Foul chimney	"	"	A small portion of shingle roof damaged by fire	Employees and neighbours, with buckets of water.
"	7-0 p.m.	7-3 p.m.	Walker's Paddock, Concord.				Burning grass	"	"	A portion of fencing damaged by fire	Burwood Vol. Fire Co., assisted by police, with buckets of water.
"	2-20 p.m.	2-45 p.m.	Junction-street, North Sydney.	Unoccupied	School	Wood, with iron roof.	Unknown	"	"	A small portion of side wall damaged by fire and cutting away.	Police and citizens, with buckets of water.
"	2-58 p.m.	6-0 p.m.	Newland-street, Waverley.	C. J. Christie	Private dwelling	Brick, with shingle roof.	Foul chimney	Com. Union, £250	Com. Union, £600	A small portion of shingle roof damaged by fire	Neighbours, with buckets of water.

DETAILS of Fires which have occurred within the Metropolitan District—continued.

Date.	When discovered.	Time of call.	Locality.	Name of tenant.]	How premises occupied.	Construction of premises.	Origin or supposed cause of fire.	Insurances.		Extent of damage, &c.	Extinguished by
								Contents.	Building.		
Tuesday, 3 September	9 5 p.m.	9 9 p.m.	Victoria-street, Green wich.	Walter Thomson .....	Private dwelling..	Brick, with slate roof.	Kerosene lamp, upsetting of.	Aust. Mutl., £150; Standard, £300	United, £400	A cottage of six rooms; front room on ground floor severely damaged by fire and water; a small quantity of wearing apparel in back room damaged by fire and water; a small portion of roof damaged by fire and cutting away.	M.F.B. and neighbours, with Toser pumps.
Wednesday, 4 September	12 40 p.m.	12 42 p.m.	Carlton Crescent, Ash- field.	Unoccupied .....	"	"	Burning grass ..	None .....	Unknown .....	A small portion of fencing at rear of premises damaged by fire.	Ashfield Vol. Fire Co., assisted by M.F.B., with buckets of water.
"	11 35 p.m.	11 38 p.m.	Railway Avenue, Peter- sham.	Railway embankment.		"	Spark from chim- ney.	"	None .....	A portion of hardwood embankment damaged by fire .....	M.F.B., with buckets of water.
Thursday, 5 September	12 32 p.m.	12 36 p.m.	Hipp-street and Crown Road, Pyrmont.	Parch and Learoy .....	Stores .....	Wood and iron	Light thrown down.	Building and contents, Royal, £4,000.		A small portion of flooring on ground damaged by fire .....	M.F.B. and employees, with buckets of water.
Friday, 6 September	11 8 a.m.	11 10 a.m.	457, Crown-street, City	Mrs. Gardiner .....	Private dwelling..	Brick, with shingle roof.	Spark from chim- ney.	None .....	Unknown .....	A small portion of shingle roof damaged by fire and cutting away.	Paddington Brewery Vol. Fire Co., assisted by M.F.B., with buckets of water.
"	4 52 p.m.	4 53 p.m.	Market-street, City ...	Sydney Municipal Council	Shed .....	Wood, with iron roof.	"	"	None .....	Side of shed and a small portion of fencing slightly damaged by fire.	M.F.B., with one hydrant.
Saturday, 7 September	2 5 p.m.	2 7 p.m.	Brno-street, Waverley	T. S. Broomfield .....	Private dwelling..	Brick, with iron roof.	Burning grass ..	"	"	A small portion of fencing damaged by fire .....	Inmates and neighbours, with buckets of water.
"	4 25 p.m.	4 30 p.m.	Liverpool Road, Enfield	R. S. Austin .....	"	Brick, with slate roof.	"	"	Unknown .....	A small portion of fencing at rear of premises damaged by fire.	Burwood V. F. Co., assisted by Ashfield V. F. Co. and M.F.B., with one hydrant.
"	"	"	"Bainbridge," Badmin- ton Road, Enfield.	Herman H. Groth .....	"	"	"	"	"	"	"
Sunday, 8 September	11 40 a.m.	11 51 a.m.	"Strathmore," Glebe Road, Glebe.	Eugene Bovin .....	"	Stone, with iron roof.	Light thrown down.	Unknown .....	"	A quantity of grass at rear of premises burned .....	Globe V. Fire Co., assisted by M.F.B., with buckets of water.
"	4 0 p.m.	None rec'd.	Narmbeon .....	Unoccupied .....	Shed .....	Wood, with iron roof.	Burning grass ..	None .....	None .....	An empty shed partly burned out .....	Caretaker and neighbours, with buckets of water.
"	4 10 p.m.	4 17 p.m.	Vaucluse .....	Church of England.		Stone, with shingle roof.	"	"	Unknown .....	A portion of roof and a small portion of fencing damaged by fire.	Neighbours, with buckets of water.
"	3 45 p.m.	5 10 p.m.	"Aston," Belle View Hill, Vaucluse.	Captain Castle .....	Private dwelling..	Brick and stone, with slate roof.	"	Unknown .....	Colonial Mutual.	A small portion of fencing at rear of premises damaged by fire.	Woollahra Vol. Fire Co., assisted by other Vol. Fire Cos., with one hydrant.
Monday, 9 September	12 13 a.m.	12 15 a.m.	Church-street, Parra- matta.	D. D. Henderson .....	Grocer .....	Brick, with shingle roof.	Unknown .....	Merc'ile Mutual, £450.	Liverpool, Lon- don, and Globe, £500.	First floor of store damaged by fire and water; roof partly burned off.	Parramatta Vol. Fire Cos. Nos. 1 and 2, with one hydrant.
"	3 45 a.m.	3 54 a.m.	"Aston," Belle View Hill, Vaucluse.	*Captain Castle .....	Private dwelling..	Brick and stone, with slate roof.	Burning grass ..	Unknown .....	Colonial Mutual.	A small portion of fencing at rear of premises damaged by fire.	Woollahra Vol. Fire Cos. assisted by other Vol. Fire Cos., with one hydrant.
"	9 23 a.m.	9 25 a.m.	Wardell street, Peter- sham.	Railway line.		"	Spark from chim- ney.	None .....	None .....	A small portion of fencing damaged by fire .....	M.F.B., assisted by Leich- hardt Vol. Fire Co., with one hydrant.
"	10 40 a.m.	10 47 a.m.	Belle View Hill, Vau- cluse.	— Goldsmith .....	Private dwelling..	Brick, with slate roof.	Burning grass ..	Unknown .....	Unknown .....	A portion of fencing at rear of premises damaged by fire ..	Woollahra Vol. Fire Co., assisted by other Vol. Fire Cos., with one hydrant.
"	11 10 a.m.	11 15 a.m.	O'Connell-street, Parra- matta.	— M'Kinman .....	"	Wood, with iron roof.	Unknown .....	None .....	"	Kitchen at rear of premises burned out and fallen down ..	Parramatta Vol. Fire Cos. Nos. 1 and 2, with one hydrant.
"	"	"	"	R. C. Thorpe .....	"	Brick, with shingle roof.	"	"	"	Roof of dwelling slightly damaged by fire .....	"
"	12 20 p.m.	12 25 p.m.	Bishop's Court, Rand- wick.	St. Nicholas' College—Rev. Jos Campbell, Principal.	"	"	Burning grass ..	Unknown .....	North British and Mercantile, £5,500.	A quantity of fencing and bush-house destroyed by fire, and roof of College slightly damaged by fire.	Waverley Vol. Fire Co. and M.F.B., with one hydrant and one steam fire engine, assisted by other Vol. Fire Cos.
"	3 0 p.m.	3 12 p.m.	"Carrara," Rose Bay, Vaucluse.	G. Boyce Allen .....	Private dwelling	Brick, with slate roof.	"	"	Unknown .....	A quantity of fencing in rear of premises damaged by fire	Woollahra Vol. Fire Co., with one hydrant.
"	3 10 p.m.	3 16 p.m.	Gerard-st., off Military Road, North Sydney	Paddock.		"	"	None .....	None .....	A quantity of grass burned .....	M.F.B., with one hydrant.
"	7 15 p.m.	7 21 p.m.	Rose-st., Enfield	Wm. Brinsmead .....	Dairyman .....	Weatherboard, with iron roof.	Kerosene lamp, upsetting of.	Mercant. Mutual, £50.	Unknown .....	A four-roomed cottage; two front rooms with contents burned out and fallen down, roof of kitchen burned off, and furniture damaged by removal.	Burwood Vol. Fire Co., assisted by Ashfield Vol. Fire Co. and M.F.B., with one hydrant.
"	7 24 p.m.	7 26 p.m.	200, Enmore Road, Newtown.	F. Bryan .....	Fruiterer .....	Brick, with iron roof.	Candle .....	None .....	"	Front bedroom on first floor and contents slightly damaged by fire and water.	Inmates, with buckets of water.
Tuesday, 10 Sept.	6 25 a.m.	5 2 8 a.m.	Holden-street, Ashfield	Donald Robinson .....	Private dwelling	Brick, with slate roof.	Burning grass ..	"	"	A quantity of grass, several trees, and a tent in rear of premises damaged by fire.	Ashfield Vol. Fire Co., with one hydrant.
"	7 9 a.m.	7 34 a.m.	Church-street, Newtown	New town Cemetery—G. Clark, caretaker.	"	"	"	"	None .....	A small portion of fencing damaged by fire .....	M.F.B., with one hydrant.

\* Previous fire, 8th September, 1896.

DETAILS of Fires which have occurred within the Metropolitan District.—continued.

Date.	When discovered.	Time of call.	Locality.	Name of tenant.	How premises occupied.	Construction of premises.	Origin or supposed cause of fire.	Insurances.		Extent of damage, &c.	Extinguished by
								Contents.	Building.		
Tuesday, 10 Sept.	8 10 a.m.	8 11 a.m.	Macquarie street, City	Open yard			Spark from chimney.	None	None	A portion of fencing damaged by fire in yard adjoining Treasury.	M.F.B., with one hydrant.
"	8 20 p.m.	8 39 p.m.	Kogarah Road, Kogarah	F. and G. Venn.	Shed	Wood, with iron roof	Unknown	"	"	A shed with contents slightly damaged by fire	Kogarah Vol. Fire Co., with one hydrant.
Tuesday, 10 Sept.	1 2 p.m.	1 4 p.m.	Jones-street, Ultimo	M'Lean Bros. & Rigg	"	"	Burning grass	"	"	A shed 12 ft. x 12 ft. used as an oil store, with contents, slightly damaged by fire.	M.F.B., with one hydrant.
Wednesday, 11 Sept.	6 35 p.m.	6 35 p.m.	*10, Fitzroy-street, North Sydney.	C Goodfellow	Private dwelling	Brick, with slate roof.	Candle	"	Unknown	Back bedroom on ground floor with contents slightly damaged by fire.	Inmates, with buckets of water.
"	10 3 p.m.	10 5 p.m.	Carrington Road, Waverley.	T. Batty	Stables	Wood, with iron roof.	Light thrown down.	"	"	Floor of bus slightly damaged by fire	Waverley Vol. Fire Co., with buckets of water.
Thursday, 12 Sept.	12 10 p.m.	None rec'd.	Birchgrove Road, Dalman	S. Phillips	Private dwelling	Brick, with shingle roof.	Unknown	"	Equitable, £200.	Furniture and contents of front bedroom on first floor slightly damaged by fire.	Inmates, with buckets of water.
"	7 50 p.m.	8 0 p.m.	7, Davis-street, Leichhardt.	Wm. Humphreys	"	Weatherboard, with iron roof	Kerosene lamp, upsetting of.	Com. Union, £30.	Com. Union, £100	Bedroom on ground floor with contents damaged by fire, smoke, and water.	Inmates and neighbours, with buckets of water.
Friday, 13 Sept.	9 12 a.m.	9 15 a.m.	160, Redfern-street, Redfern	Flora Lutten	Boarding-house	Brick, with iron roof.	Matches, careless use of.	None	Unknown	Front bedroom on ground floor with contents slightly damaged by fire and water.	M.F.B., with one hydrant, with buckets of water.
"	8 23 p.m.	8 26 p.m.	1869, George-street, City	C. Fraenkel	Painter and decorator.	"	Unknown	New Zealand, £2,000.	Imperial, £400	Back shop with contents severely damaged by fire and water; basement and contents damaged by water.	M.F.B., with one hydrant, assisted by several Vol. Fire Cos.
Saturday, 14 Sept.	4 45 a.m.	4 55 a.m.	Bishop's Avenue, Randwick.	Mrs. McDonald	Private dwelling.	Weatherboard, with iron roof.	"	Building and contents, Australian Mutual, £300.	"	A cottage of eight rooms burned out and fallen down	Waverley V.F. Co., with two hydrants, assisted by other V.F. Cos.
"	"	"	"	Frederick Oakes	"	"	"	Building and contents, Mercantile Mutual, £450.	"	Gable end of house damaged by fire	"
"	1 35 p.m.	1 20 p.m.	Phillip street, Parramatta.	John Mabing	"	"	Burning grass	None	Unknown	A small portion of fencing damaged by fire in yard at rear of premises.	Parramatta V.F. Cos. 1 and 2, with one hydrant.
"	5 10 p.m.	5 15 p.m.	Allen-street, Leichhardt	Roman Catholic Cemetery, John Moss, caretaker	"	"	"	"	None	A small portion of fencing damaged by fire	Leichhardt V.F. Co., with buckets of water.
"	5 30 p.m.	5 35 p.m.	Church-street, Newtown	Newtown Cemetery.	"	"	"	"	"	"	M.F.B., with one hydrant
"	8 43 p.m.	8 45 p.m.	George-street, Parramatta	Victoria Theatre	Theatre	Brick, with iron roof.	Gas bracket	"	Unknown	A calico sign under verandah damaged by fire	Parramatta V.F. Co., with buckets of water.
Tuesday, 17 Sept.	12 12 a.m.	12 11 a.m.	Crossvenor and Harrington Streets, City.	J. Lynch & Co.	Licensed Victualers.	"	Unknown	"	"	A number of empty cases damaged by fire	M.F.B., with one hydrant.
"	8 10 p.m.	8 17 p.m.	14, Carrington-street, City.	Lichtner & Co.	Workshop	Brick and stone, with iron roof.	Vapour of spirit coming in contact with flame Lime-slaking	North British, £1,500.	Scottish Union and National, £1,500.	A small quantity of tan polish destroyed, and door of workshop slightly damaged by fire, on ground floor.	Employees, with buckets of water.
"	3 0 a.m.	3 4 a.m.	Railway Station, St. Leonards.	Railway Commissioners.	"	Railway trucks	"	None	None	A railway truck severely damaged by fire, and 6 tons of lime slaked by run.	M.F.B., with one hydrant.
Thursday, 19 Sept.	4 10 p.m.	4 19 p.m.	43, Arthur-st., North Sydney.	Patrick Baptist	Private dwelling	Brick, with slate roof.	Matches, careless use of	"	North British, £250	Front bedroom on first floor with contents slightly damaged by fire.	M.F.B., with buckets of water.
Friday, 20 Sept.	7 9 p.m.	7 5 p.m.	Church-street, Parramatta.	L. Pollock	Photographer	Brick, with shingle roof.	Candle	Unknown	Unknown	Bedroom on second floor with contents damaged by fire and water	Parramatta Vol. Fire Cos. 1 and 2, with one hydrant.
Saturday, 21 Sept.	7 34 a.m.	7 30 a.m.	Denison-st., Woollahra	A. Cummins	Shed	Wood, with iron roof.	Burning rubbish	None	None	A shed, about 60 x 12 feet, with contents, consisting of two carts, slightly damaged by fire.	Woollahra Vol. Fire Co., with buckets, assisted by other Vol. Fire Cos.
"	7 15 p.m.	7 16 p.m.	8, Little Napier-st., Paddington	Thos. Avery	Private dwelling.	Brick, with slate roof.	Candle	"	Unknown	Front bedroom on first floor with contents slightly damaged by fire and water.	Paddington Brewery Vol. Fire Co., with buckets of water.
Sunday, 22 Sept.	8 21 a.m.	8 29 a.m.	Elizabeth-st., Ashfield.	George R. Potter	Grocer	Brick, with iron roof.	Unknown	Mercantile Mutual, £300.	Mercantile Mutual, £1,200	A loft over stable in rear of premises, used as a store room, with contents, slightly damaged by fire and water.	Inmates and neighbours, with buckets of water.
Monday, 23 Sept.	10 10 a.m.	10 10 a.m.	Rose-street, Annandale	Fred. Smith	Private dwelling.	Brick, with slate roof.	Tar boiling over.	Australian Mutual, £150.	Australian Mutual, £250.	A dining-room on ground floor with contents damaged by smoke and heat.	M.F.B., with buckets of water
"	2 50 p.m.	2 55 p.m.	2, Cringend-street, Darlingtonhurst.	Angelo Zachary	Stables	Wood and iron, with iron roof	Unknown	None	Unknown	A stable, about 16 x 12 ft., with contents, burned out and fallen down; one horse burned to death.	Paddington Brewery V.F. Co., with one hydrant, assisted by M.F.B.
Tuesday, 24 Sept.	6 55 p.m.	7 0 p.m.	Parnell-street, Burwood	Dr. T. Fyzell	Private dwelling.	Brick, with slate roof.	Spark from chimney.	"	"	Gable end of roof slightly damaged by fire	Burwood Vol. Fire Co., with one hydrant, assisted by M.F.B. and Ashfield V.F. Co.
Wednesday, 25 Sept.	7 43 p.m.	7 45 p.m.	184, Wilson-street, Newtown.	Stanley Huxley	"	Brick, with shingle roof.	Unknown	Australian Mutual, £150.	"	Middle room on ground floor, with contents, severely damaged by fire and water; room adjoining damaged by fire.	M.F.B., with one hydrant.
Friday, 27 Sept.	11 0 a.m.	None rec'd.	William-street, Canterbury.	Unoccupied	"	Weatherboard, with iron roof.	"	None	"	A cottage of three rooms burned out and fallen down	Burned itself out.
Monday, 30 Sept.	9 0 a.m.	"	Malcolm-lane, off George-street.	Henry Proudfoot	Builder	Stone and iron, with iron roof.	"	Norwich Union, £150.	"	A quantity of timber burned on verandah	Neighbours, with buckets of water
Wednesday, 2 Oct.	11 35 p.m.	11 45 p.m.	Erskingville Road, Erskingville.	William Short	Grocer	Brick, with iron roof.	"	None	New Zealand, £460.	Shop on ground floor slightly damaged by fire, smoke, and water.	M.F.B., with one hydrant.

\* Elizabeth Goodfellow, aged 30 years, slightly burned about the hands; attended to at home.

† Previous fire, 15 March, 1887.

‡ Previous fire, 23rd July, 1896.

DETAILS of Fires which have occurred within the Metropolitan District.—continued.

Date.	When discovered.	Time of call.	Locality.	Name of tenant.	How premises occupied.	Construction of premises.	Origin or supposed cause of fire.	Insurances.		Extent of damage, &c.	Extinguished by
								Contents.	Building.		
Friday, 4 October.	10:51 p.m.	10:56 p.m.	Victoria-street, Paddington.	Mrs. Vincent	Private dwelling.	Stone, with slate roof.	Candle	None	Unknown	Bed-curtains in bedroom on ground floor destroyed by fire	Inmates and neighbours, with buckets of water.
Saturday, 6 October.	9:20 a.m.	6:22 a.m.	31, Francis-street, Glebe.	Francis White	"	Brick, with slate roof.	"	"	Unknown	Bed and bedding in front room on ground floor slightly damaged by fire and water.	Inmates, with buckets of water
Monday, 7 October.	11:0 p.m.	11:3 p.m.	4, O'Connell-st., City	M. Barr & Co.	General merchants	Stone, with slate roof.	Unknown	Royal, £2,000; Com Union, £1,500—£3,500.	Lion, £500	Warehouse of one floor with contents, consisting of boxes of tea, nutmegs, and a quantity of damask, damaged by fire, smoke, and water; building also slightly damaged.	M.F.B., with one hydrant.
Tuesday, 8 October.	11:37 p.m.	11:42 p.m.	Scott-street, Waverley	Unoccupied	Private dwelling.	Weatherboard, with iron roof.	"	None	Mercantile Mutual, £50.	A cottage of three rooms burned out and fallen down	Waverley Vol. Fire Co., assisted by other Vol. F. Cos., with one hydrant.
Wednesday, 9 October.	2:15 p.m.	2:55 p.m.	Barrack Lane, Parramatta.	Foo Kee	Hawker	Brick, with iron roof.	"	"	Unknown	A cottage of two rooms, with contents, slightly damaged by fire.	Parramatta V.F. Cos., Nos. 1 and 2, with buckets of water.
"	6:59 p.m.	7:2 p.m.	Ross-st., Forest Lodge	Upton & Co.	Soap factory	Weatherboard, with iron roof.	Light thrown down.	Unknown	"	A quantity of bagging damaged by fire in store-room on ground floor.	Employees, with buckets of water.
Thursday, 10 October.	8:25 p.m.	None rec'd	Villers-st., Parramatta	Rev. O. Riley	Private dwelling.	Brick, with iron roof.	Candle	None	"	Contents of front room on ground floor damaged by fire	Inmates, with buckets of water.
Friday, 11 October.	7:15 a.m.	7:21 a.m.	Vulcan Brickworks, St Peters	E Vickery & Sons	Brick kiln	Brick, with iron roof.	Overheating of brick kiln.	"	"	Roof of shed, 130 x 20 ft., damaged by fire and cutting away; a six horse-power engine damaged by fire and water.	M.F.B., with one steam fire engine.
Monday, 14 October.	9:6 a.m.	9:8 a.m.	Park road, Glebe	J. McCloud & Co.	Soap factory	Weatherboard, with iron roof.	Resin boiling over	City Mutual, £800	"	A small quantity of resin damaged by fire	Employees, with buckets of water
"	9:15 a.m.	9:17 a.m.	Nelson-st., Annandale	Beale & Co.*	Store.	Wood and iron, with iron roof	Incendiarism	Com. Union, £2,600; New Zealand, £2,500—£5,100.	"	Several cases of sewing machines slightly damaged by fire	Employees, with buckets of water.
"	11:45 a.m.	11:47 a.m.	"	" †	"	"	"	"	"	"	M.F.B., with buckets of water.
"	1:35 p.m.	1:38 p.m.	High-street, City	Union Club, C. R. Birnsdale, Secretary.	Club	Stone and brick with slate roof.	Overheating of hot water pipes.	Norwich Union	Norwich Union	Wood lining round the hot water tanks on roof damaged by fire and cutting away; ceiling of bathroom on third floor damaged by water.	M.F.B., with one hydrant.
Friday, 18 October.	12:45 p.m.	12:47 p.m.	Marrickville Road and Silver st., Marrickville.	Edward Evans	Chemist	Brick, with iron roof.	Fat boiling over	Imperial, £550	Aust. Mutual, £700.	A shed, 12 feet x 8 feet, at rear of premises, with contents, burned out and fallen down; back kitchen severely damaged by fire and water.	M.F.B., with one hydrant, assisted by Leichhardt Vol. Fire Co.
"	"	"	Marrickville Road	Mrs. Milne	Fruiterer	"	"	None	Mercantile Mutual	Washhouse and about 20 feet of fencing in rear of premises damaged by fire.	"
"	9 p.m.	9:3 p.m.	37, Pitt-street, City	J Mackintosh and Sons	Ironmongers	Brick, with slate roof.	Burning rubbish.	Unknown	Unknown	A quantity of rubbish burned in yard at rear of premises	M.F.B., with Tozer pump
Monday, 21 October.	12:12 noon	12:2 p.m.	30, Kippax-street, Surry Hills.	W. Matthews	Van Proprietor	Brick, with iron roof.	Unknown	None	"	Bed, bedding, and windows in back room on first floor damaged by fire and water.	Standard Brewery Vol. Fire Co. with Tozer pump.
"	9:35 p.m.	9:40 p.m.	28, Campbell-street, Glebe.	E. Dawson	Fruiterer	"	Spark from another fire.	"	"	Back kitchen on ground floor, with contents, severely damaged by fire and water.	Glebe Volunteer Fire Co., assisted by M.F.B., with one hydrant.
Tuesday, 22 October.	12:30 a.m.	12:45 a.m.	Ocean street, Penhurst	Mrs. Egan	Private dwelling.	Weather board, with iron roof.	Unknown	"	Australian Mutual, £150.	A cottage of four rooms, with contents, burned out and fallen down.	Burned itself out.
"	3:22 a.m.	3:25 a.m.	Corporation Buildings, 104, Sussex-st., City.	T. McHugh	Produce merchant	Brick, with slate roof.	"	"	None	A quantity of rubbish burned in store	M.F.B., with buckets of water.
"	2:15 p.m.	2:25 p.m.	Johnson street, North Sydney.	Unoccupied	School	Wood, with iron roof.	"	"	"	A small portion of lining boards at gable end of building, and a portion of side damaged by fire	Neighbours, with buckets of water.
Thursday, 24 October.	12:30 p.m.	12:34 p.m.	141, Constitution Road, Petersham.	George Naylor	Private dwelling.	Weatherboard, with iron roof	Spark from fire-place.	Aust. Mutual, £150.	Merc'ile Mutual, £150.	A cottage of four rooms, with contents, severely damaged by fire and water	M.F.B., with one hydrant, assisted by Ashhead and Leichhardt Vol. Fire Cos.
"	"	"	143, Constitution Road, Petersham.	Unoccupied	"	Brick, with slate roof.	"	None	Unknown	Side and roof of dwelling damaged by fire	"
Friday, 25 October.	4:25 a.m.	4:28 a.m.	67, George-street West, City.	Mary Bourke	Stables	Wood, with iron roof.	Candle	"	"	Stable in rear of premises containing a quantity of straw, &c., damaged by fire	M.F.B., with one hydrant.
Saturday, 27 October.	9:52 p.m.	9:57 p.m.	23, Gould-street, off Regent-street	William Tilson	Private dwelling.	Weatherboard, with iron roof.	"	"	"	Bed curtains and a quantity of wearing apparel damaged by fire and water in front room on ground-floor.	Inmates, with buckets of water.
Wednesday, 31 October.	5:29 p.m.	5:25 p.m.	396, Kent-street, City	Jules Renard & Co	Wine and spirit merchants.	Brick, with shingle roof.	Light thrown down.	London and Lancashire, £4,000; City Mutual, £1,000; New Zealand, £2,000.	"	Front portion of second floor of warehouse, with contents, consisting of wines, spirits, corks, and brewets' sundries, very severely damaged by fire and water; contents of third floor slightly damaged by fire and smoke; contents of two lower floors damaged by water.	M.F.B., with one hydrant, assisted by several Vol. Fire Cos.
"	9:30 p.m.	9:32 p.m.	1158-156, Glebe Road, Glebe.	Alfred Morris (Eden & Co.)	Draper	Brick, with slate roof.	Unknown	Norwich Union, £1,500.	"	A small quantity of drapery in room at rear of shop damaged by fire and water.	Glebe Vol. Fire Co., assisted by M.F.B., with buckets of water.
Saturday, 2 November.	2:0 a.m.	None rec'd.	Carrington-st. and Parr Road, Petersham.	M. J. McCormack	Produce merchant	Brick, with iron roof.	"	None	"	A quantity of rubbish burned in yard at rear of premises	Inmates and police, with buckets of water.

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\* Subsequent fire, 11 47 a.m., 14th October, 1895. † Previous fire, 9:7 a.m., 14th October, 1895. John Cousins was charged at the Glebe Police Court, on the 17th inst., with wilfully setting fire to the premises, and was committed for trial to the Court of Quarter Sessions, Darlinghurst. On the 8th November, 1895, Cousins was found guilty of causing both fires and was sentenced to three years' penal servitude. ‡ Previous fire, 1st April, 1895.

DETAILS of Fires which have occurred within the Metropolitan District—continued.

Date.	When discovered.	Time of call.	Locality.	Name of tenant.	How premises occupied.	Construction of premises.	Origin or supposed cause of fire.	Insurances.		Extent of damage, &c.	Extinguished by
								Contents.	Building.		
Friday, 8 Nov.	8 30 p.m.	9 45 p.m.	233, Oxford-street, Paddington.	J. Beeton	Furniture dealer.	Brick, with iron roof.	Overboiling of turpentine.	Liverpool, London and Globe, £150.	Unknown	Back room used as workshop with contents slightly damaged by fire. A small quantity of bedding in front shop also slightly damaged by fire.	Paddington Vol. Fire Co., with buckets of water.
Saturday, 9 Nov.	10 45 a.m.	10 48 a.m.	30, Oxford-street, Paddington.	Mrs. McFarland	Private dwelling.	Weatherboard, with iron roof.	Candle	None	"	Contents of bedroom on ground floor damaged by fire and water.	Inmates with buckets of water.
"	9 5 p.m.	None rec'd.	Herman-street, Rockdale	George Leider	"	"	Unknown	Manchester, £80.	Mercantile Mutual, £200.	A house of six rooms with contents burned out, and roof partly off. Side of stable and portion of fencing damaged by fire.	Kegarah and Rockdale Vol. Fire Cos., with one hydrant.
Monday, 11 Nov.	11 50 a.m.	11 55 a.m.	Yarrabee Road, Woolahra	Mrs. Wilks	"	Stone, with shingle roof.	Spark from chimney	Stables and contents, None.	Manchester, £40. Unknown	A portion of shingle roof damaged by fire	Neighbours with buckets of water.
"	1 49 p.m.	1 45 p.m.	13½, Polican-street, City	Patrick McMahon	"	Brick, with iron roof.	Matches, children playing with	"	"	Front bedroom on first floor with contents damaged by fire and water. Front room on ground floor slightly damaged by water.	Paddington Brewery Vol Fire Co., assisted by M.F.B., with buckets of water.
Wednesday, 13 Nov.	8 68 p.m.	8 54 p.m.	38, Cleveland-street, City.	John Riley	"	"	Burning rubbish.	Building and contents, Mercantile Mutual, £500.	"	A quantity of rubbish burned in yard at rear of premises.	Inmates, with buckets of water.
Friday, 15 Nov.	2 10 a.m.	2 11 a.m.	Granville	Australian Kerosene Oil and Mineral Co. R. V. Paddington, Sec.	Kerosene works.	Iron	Unknown	None	None	A shed, about 100 x 12 ft., containing a quantity of box-making timber, burned out and fallen down; stable adjoining also burned down.	Granville and Parramatta Vol. Fire Companies, with one hydrant.
Sunday, 17 Nov.	1 30 a.m.	None rec'd.	Wyndham and Raglan Streets, Alexandria	Wm. Marr	Licensed victualler.	Brick, with iron roof.	Candle	Unknown	Unknown	Contents of bedroom on first floor slightly damaged by fire.	Inmates, with buckets of water.
Tuesday, 19 Nov.	1 52 a.m.	1 56 a.m.	433 and 435, Kent-street, City.	*S. Weingott & Son	Waterproof and clothing manufacturers.	"	Unknown	New Zealand, £1,500; S. Austral., £500; Northern, £200; Queensland Mut., £450; United, £400; Sun, £200; N. Queensland, £500—£1,500.	Norwich Union, £750; Batavia, £750—£1,500.	A building of one floor, about 40 x 120 ft., containing a large quantity of waterproof clothing, &c., nearly burned out, and roof partly off.	M.F.B., assisted by Vol. Fire Companies, with one steam fire engine and two hydrants.
"	4 35 p.m.	4 19 p.m.	Iron Cove Bridge, Balmain.	N.S.W. Government	Bridge	Wood and iron	Light thrown down	None	None	A few wooden planks slightly damaged by fire	Balmain Vol. Fire Co., with buckets of water.
"	4 45 p.m.	4 50 p.m.	14, Carrington-street, City.	Leuchner & Co.	Workshops	Brick with iron roof.	Spark from chimney.	"	Unknown	Several empty crates, and a quantity of straw, burned in open shed in yard at rear of premises.	Employees, with private hose, and M.F.B., with one hydrant.
Wednesday, 20 Nov.	3 37 a.m.	3 45 a.m.	12, St. Mary-street, Newtown.	William Knight	Private dwelling.	Brick, with slate roof.	Curtains in contact with lamp	Mercantile Mutual, £94.	Unknown	Front bedroom on first floor and contents severely damaged by fire and water; ceiling of room under damaged by water.	M.F.B., with hand pump
"	2 14 p.m.	2 16 p.m.	Elizabeth-street, Paddington.	Horace Hills	"	Weatherboard, with iron roof.	Unknown	None	"	A small portion of lining boards damaged by fire in room on ground floor.	Inmates, with buckets of water.
"	8 41 p.m.	8 44 p.m.	North-street, off Sussex-street, City.	Joseph Rudd	"	Brick, with iron roof.	Candle	"	"	Window curtain burned in back room on first floor	"
Thursday, 21 Nov.	10 5 p.m.	None rec'd.	75, Phillip-street, City	Mrs. Pierce	Boarding-house	Brick, with slate roof.	"	"	"	Window curtain burned in front bedroom on third floor	"
Monday, 25 Nov.	8 40 p.m.	8 41 p.m.	Wigram Road, Glebe	P. Diamond	Private dwelling.	"	Unknown	Unknown	"	A quantity of rubbish burned in yard at rear of premises	"
Tuesday, 26 Nov.	1 27 p.m.	1 39 p.m.	Corner Oxford-street and Moore Park Road.	Tramway Sheds.		Weatherboard, with iron roof.	Light thrown down.	None	None	A quantity of rubbish burned in yard at rear of premises.	Woolahra and Paddington Vol. Fire Cos., with buckets of water.
"	5 19 p.m.	5 24 p.m.	Walker-street, North Sydney.	James Munro	Ironmonger	Brick, with iron roof.	Unknown	Queensland Mutual, £300.	Australian Mutual	Back portion of shop on ground floor, with contents, consisting of ironmongery, severely damaged by fire	M.F.B., with one hydrant.
Thursday, 28 Nov.	10 0 p.m.	10 4 p.m.	Launders st., Redfern	F. C. Lackman	Paper factory	Brick with iron roof.	Unknown	New Zealand, £600.	Unknown	A building of one floor, contents consisting of paper, paper-bags, machinery and fittings slightly damaged by fire and water.	M.F.B. and occupants, with buckets of water.
"	8 30 p.m.	None rec'd.	63, George st., Redfern.	Mrs. Martin	Private dwelling	Weatherboard, with iron roof.	Light thrown down.	None	"	Back room on ground floor and contents slightly damaged by fire and water.	Inmates, with buckets of water.
Friday, 29 Nov.	7 46 p.m.	7 46 p.m.	52, 54, 56, Harbour st., City	Laycock, Son, and Nettleton.	Bedding manufacturers.	Brick, with iron roof.	Machinery, friction of.	"	"	About 1 cwt. of cocoanut fibre and a portion of wooden partition damaged by fire and water.	Grinell sprinkler.
Saturday, 30 Nov.	4 40 p.m.	4 35 p.m.	146, Pitt-street, City	Cunningham & Co.	Printers and stationers.	Brick, with slate roof.	Light thrown down.	Citr Mutual, £5,000; Perwent and Tamar, £1,000; Atlas, £700—£6,700.	"	Some cotton waste buried in rear of shop on ground floor.	Employees and M.F.B., with buckets of water.
"	10 13 p.m.	10 14 p.m.	70, Devonshire-street, City.	G. Dawson	Private dwelling	Brick, with iron roof.	Candle	None	"	Window curtain in front bedroom on first floor slightly damaged by fire.	Inmates, with buckets of water.
Sunday, 1 Dec.	7 25 p.m.	7 29 p.m.	Elizabeth-street, Paddington.	Dr. Barkas	"	Brick, with slate roof.	Light thrown down.	Building and contents, Northern Insurance Co., £1,600.	"	Back bedroom on second floor damaged by fire and water.	Paddington V.F. Co., with buckets of water.
Monday, 2 Dec.	9 40 a.m.	9 45 a.m.	Marion-st., Leichhardt	Roman Catholic Cemetery. John Moss, caretaker.		"	"	"	"	A small portion of fencing damaged by fire	Leichhardt V.F. Co., with buckets of water.
"	12 30 p.m.	None rec'd.	30, Raglan-street, Waterloo.	M. F. Shaw	Private dwelling.	Brick, with shingle roof.	Spark from chimney.	None	Unknown	About 10 x 8 ft. of shingle roof damaged by fire, and cutting away, room under damaged by water.	Inmates, with buckets of water.

\* Previous fire, 17th August, 1892. † Previous fire, 17th September, 1895. ‡ Previous fire, 14th September, 1895.

DETAILS of FIRES which have occurred within the Metropolitan District—continued.

Date.	When discovered.	Time of call.	Locality.	Name of tenant.	How premises occupied.	Construction of premises.	Origin or supposed cause of fire.	Insurances.		Extent of damage, &c.	Extinguished by.
								Contents.	Building.		
Tuesday, 3 Dec.	3-29 p.m.	3-48 p.m.	Marion-street, Auburn..	Alex. Robertson .....	Private dwelling..	Weatherboard, with iron roof.	Unknown .....	Mer. Mutual, £75	Mer. Mutual, £175	A cottage of four rooms with contents burned out, and fallen down.	Sydney Meat Preserving Co.'s Vol. Fire Co., assisted by Rookwood Vol. Fire Co., with 3 hydrants.
"	"	"	"	Geo. T. Lowe .....	"	"	"	Unknown .....	" £200	A cottage of three rooms severely damaged by fire, furniture damaged by removal.	"
Friday, 6 Dec.	8-10 p.m.	8-18 p.m.	23, Garden-street, Alexandria	J. Smith .....	"	Brick, with iron roof	Smoking tobacco	None .....	Unknown .....	A small quantity of wearing apparel, in front bedroom on first floor, damaged by fire and water.	Inmates, with buckets of water.
Sunday, 8 Dec.	9-36 p.m.	9-37 p.m.	785, George-street, City	C. Kinsela .....	Undertaker .....	Stone, with iron roof.	Gas bracket ..	" .....	" .....	A small portion of lining boards, in front shop, damaged by fire and cutting away.	"
Tuesday, 10 Dec.	10-57 a.m.	11-0 a.m.	50, Fraser Road, Petersham.	Herbert Younger .....	Private dwelling..	Brick, with iron roof.	Turpentine boiling over.	Queensland Mutl, £500.	" .....	Table and cover, in kitchen on ground floor, slightly damaged by fire.	Inmates and neighbours, with buckets of water
Wednesday, 11 Dec.	12-20 a.m.	12-27 a.m.	101, Riley-street, City	John Middleton .....	Cab proprietor ..	Wood, with iron roof.	Light thrown down.	None .....	None .....	A small quantity of straw destroyed by fire, and a horse slightly burned in stable at rear of premises.	"
Friday, 13 Dec.	3-24 p.m.	3-26 p.m.	594, George-street, City	Prof. Allen .....	Showman .....	Brick, with slate roof.	Candle .....	" .....	Unknown .....	Curtains in back of shop destroyed by fire .....	Inmates, with buckets of water.
Saturday, 14 Dec.	10-30 p.m.	10-35 p.m.	Little Queen-street, Newtown.	Alfred James .....	Private dwelling..	Brick, with iron roof.	Curtain in contact with light	" .....	" .....	Window curtain in front bedroom on first floor destroyed by fire.	"
Sunday, 15 Dec.	10-30 a.m.	10-35 a.m.	6, Dickson-street, Newtown.	Joseph Meir .....	"	"	Smoking tobacco.	" .....	Com. Union, £250	Back bedroom on first floor and contents slightly damaged by fire and water.	Inmates and M.F.B., with hand pump
Monday, 16 Dec.	12-20 p.m.	12-25 p.m.	Railway Parade, Granville.	John Raynor .....	Furniture dealer..	Wood, with iron roof.	Matches, children playing with.	" .....	None .....	A stable, about 40 ft. x 12 ft., containing a number of empty cases and a quantity of timber, burned out and fallen down.	Granville V.F. Co., with on hydrant.
"	6-5 p.m.	6-7 p.m.	Craigond House, Craigond street, City.	Railway Commissioners Mrs. E. Russell .....	Railway yard... Private dwelling.	Yard... Stone, with shingle roof.	Spark from chimney.	Standard Ins. Co. £1,000.	Unknown .....	A small portion of fencing damaged by fire .....	Inmates and neighbours, with buckets of water.
Tuesday, 17 Dec.	3-25 p.m.	3-27 p.m.	Old South Head Road, Waverley.	R. Pierson .....	Confectioner .....	Brick, with iron roof.	Matches, children playing with.	None .....	" .....	A small portion of furniture in rear of shop on ground floor slightly damaged by fire.	Neighbours, with buckets of water.
Wednesday, 18 Dec.	2-40 p.m.	2-45 p.m.	24, Walker-street, Redfern.	Henry Lane .....	Private dwelling..	Brick, with shingle roof	Spark from chimney.	" .....	None .....	12 ft. x 12 ft. of shingle roof destroyed by fire and cutting away.	M.F.B., with buckets of water.
"	"	"	26, Walker-street, Redfern.	John Hunter .....	"	"	"	" .....	" .....	A small portion of shingle roof damaged by fire and cutting away.	"
Thursday, 19 Dec.	6-15 p.m.	None rec'd	Church-street, Parramatta	G. T. Erby .....	Draper .....	Brick, with iron roof.	Unknown .....	London and Lancashire, £1,000; New Zealand, £1,000; Strathairn, £1,000; South British, £1,000; Northern, £1,000—£5,000.	Liverpool & London & Globe, £1,000.	Stock in front window, consisting of boots and shoes, damaged by fire and water.	Inmates, with buckets of water.
"	9-24 p.m.	9-27 p.m.	George-street, Redfern..	James McMahon .....	Carrier .....	Wood, with iron roof.	Light thrown down	None .....	None .....	A small quantity of straw in stable destroyed by fire .....	"
Friday, 20 Dec.	8-45 a.m.	8-50 a.m.	Miller-street, North Sydney.	A. Murphy .....	Grocer .....	Brick, with iron roof.	Spark from chimney.	City Mutual, £300	Unknown .....	Bed, bedding, and some wearing apparel in back bedroom on first floor, damaged by fire and water.	"
"	2-35 p.m.	2-42 p.m.	Lime-street Wharf, City	A U.S.N. Co. ....	Wharf .....	Wood, with iron roof.	None .....	None .....	" .....	A shed about 3 ft. x 3 ft. slightly damaged by fire .....	Employees, with private hose.
Saturday, 21 Dec.	12-30 a.m.	12-34 a.m.	*Yeo-street, Neutral Bay	Hugh Anderson .....	Private dwelling..	Brick, with slate roof.	Curtain in contact with lamp.	" .....	Com. Union, £200	Front bedroom on ground floor, with contents, slightly damaged by fire and water.	Inmates and M.F.B., with buckets of water.
Wednesday, 25 Dec.	12-16 p.m.	12-18 p.m.	10, Washington-street, City.	James Melrose .....	"	Brick, with shingle roof.	Spark from chimney.	" .....	Unknown .....	A small portion of shingle roof destroyed by fire .....	M.F.B., with hand pump.
Friday, 27 Dec.	7-35 p.m.	7-38 p.m.	138, Campbell-st., North Sydney.	His Excellency Admiral Bridge.	"	Brick, with slate roof.	Lightning .....	" .....	None .....	A portion of flooring in office on ground floor, and a portion of ceiling in office in basement, damaged by fire and cutting away; contents of both rooms damaged by water.	Inmates, with private hose.
Saturday, 28 Dec.	11-13 a.m.	11-16 a.m.	23, Grosvenor Terrace, Morehead-st., Waterloo.	G. Rowan .....	"	Brick, with iron roof.	Matches, children playing with.	" .....	Unknown .....	Bed, bedding, and a small portion of skirting board in front bedroom on first floor damaged by fire and water.	Inmates, with buckets of water.
"	7-35 p.m.	7-40 p.m.	Park and Castlereagh Streets, City.	Wm M'Pherson .....	Licensed victualler	"	Candle .....	New Zealand, £50; United, £150—£1,500.	" .....	A small quantity of bagging and a small portion of lining board in cellar damaged by fire.	"
"	11-25 p.m.	11-34 p.m.	Campbell-street, North Sydney.	Edwd. M'Gill .....	Private dwelling..	Weatherboard, with shingle roof.	" .....	None .....	None .....	A small portion of lining board damaged by fire .....	"
Sunday, 29 Dec.	2-30 a.m.	2-45 a.m.	Brand-street, Burwood	Henry Bennett .....	"	Weatherboard, with iron roof.	Spark from fire place	Mer. Mut., £50	Mer. Mut., £200.	A cottage of five rooms, with contents, burned out and fallen down.	Burwood Vol. Fire Co., assisted by Ashfield Vol. Fire Co. and M.F.B., with two hydrants.
"	"	"	"	Richard Davis .....	"	Brick, with slate roof.	"	None .....	Unknown .....	Side of building with door and windows, slightly damaged by fire.	"
Tuesday, 31 Dec.	10-28 p.m.	10-30 p.m.	West-street, Petersham	Lewisham Hospital.	"	Weatherboard, with iron roof.	Light thrown down.	" .....	None .....	An outhouse, used as laundry, containing a quantity of underclothing, damaged by fire.	Inmates and M.F.B., with hand pump.

61-1 D

25

\* Hugh Anderson, aged about 83 years, severely burned about the face, arms, back, and legs, Mrs. Anderson, aged about 32 years, slightly burned about the face. 5th January, 1896, Hugh Anderson died, 5-30 p.m. † Previous fire, 4th May, 1895.

APPENDIX VII.  
SUMMARY of Localities for 1895.

City and Suburbs.	Casualties.	Class of Fire.									Total No. of fires.	False alarms.	Chimney fires.		Grand total.
		Slight.			Serious.			Total destruction.					Attended with engines, and reported as house fires.	Attended with hand-pump only.	
		In-sured.	Not in-sured.	Insur-ance un-known.	In-sured.	Not in-sured.	Insur-ance un-known.	In-sured.	Not in-sured.	Insur-ance un-known.					
<b>CITY—</b>															
Bourke Ward .....		6	2	1	...	...	...	...	...	9	4	...	1	14	
Brisbane " .....		4	3	3	...	...	...	...	...	13	3	...	6	26	
Cook " .....		5	3	2	1	...	...	...	...	11	2	3	6	22	
Denison " .....		4	6	1	3	...	...	...	...	14	1	5	5	25	
Fitzroy " .....		5	2	...	...	...	...	1	1	9	5	...	4	18	
Gipps " .....	1	8	2	...	1	...	...	...	...	11	3	1	11	27	
Macquarie " .....		6	2	2	1	...	...	...	...	11	2	1	2	16	
Phillip " .....		5	7	4	...	...	...	...	...	16	...	...	6	22	
<b>Total .....</b>	<b>1</b>	<b>43</b>	<b>32</b>	<b>13</b>	<b>9</b>	<b>...</b>	<b>...</b>	<b>1</b>	<b>1</b>	<b>99</b>	<b>20</b>	<b>10</b>	<b>40</b>	<b>170</b>	
<b>SUBURBS—</b>															
Alexandria .....		...	1	1	...	...	...	...	...	2	...	...	...	2	
Annandale .....		3	1	1	...	...	...	1	1	7	1	...	...	8	
Ashfield .....		3	3	...	...	1	...	1	...	8	1	1	...	10	
Auburn .....		...	...	...	...	...	...	1	1	2	...	...	...	2	
Balmain .....		3	8	...	1	...	...	2	2	16	4	...	1	21	
Botany .....		...	1	...	...	...	...	...	...	1	1	...	...	2	
Burwood .....		...	2	1	...	...	...	1	...	4	2	...	...	6	
Camperdown .....		...	1	...	...	...	...	...	...	1	...	...	...	1	
Canterbury .....		...	...	...	...	...	...	6	...	6	3	...	...	9	
Concord .....		...	1	...	...	...	...	1	...	2	1	...	...	3	
Darlington .....		...	2	...	...	...	...	1	...	3	1	...	...	4	
Drummoyne .....		...	2	...	...	...	...	1	...	3	...	...	...	3	
Enfield .....		...	1	...	1	...	1	1	...	4	1	...	...	5	
Erskineville .....		...	2	...	...	...	...	...	...	2	...	...	...	2	
Granville .....		...	1	...	...	...	...	...	2	3	...	...	...	3	
Glebe .....		7	10	2	...	...	...	...	...	19	...	...	1	20	
Hurstville .....		...	...	...	...	...	...	2	...	2	1	...	...	3	
Kogarah .....		...	2	...	...	...	...	...	...	2	...	...	...	3	
Leichhardt .....	1	3	6	...	1	...	...	3	...	13	3	...	...	17	
Marrickville .....		3	3	...	1	...	...	...	1	8	3	...	1	12	
Manly .....		...	1	...	...	...	...	2	...	3	1	...	...	4	
Mosman .....		...	1	...	...	...	...	...	...	1	2	...	...	3	
Newtown .....		7	9	1	...	...	...	...	...	17	5	...	6	28	
North Sydney .....		7	9	1	1	...	...	1	...	20	8	2	6	36	
North Botany .....		...	1	...	...	...	...	1	1	3	...	...	...	3	
Paddington .....		9	9	3	...	...	...	...	...	21	5	1	5	32	
Parramatta .....		3	8	...	...	...	...	...	...	11	...	...	...	11	
Petersham .....		2	4	1	2	...	...	...	...	9	6	2	...	17	
Randwick .....		1	2	...	...	...	...	2	1	6	1	...	...	7	
Rockdale .....		1	2	...	...	...	...	2	...	5	1	...	...	6	
Redfern .....		2	11	...	1	...	...	...	...	14	1	...	3	18	
Rookwood .....		...	...	...	...	...	...	...	...	...	1	...	...	1	
St. Peters .....		1	2	...	...	...	...	...	...	3	1	1	...	5	
Strathfield .....		...	...	...	...	...	...	...	...	1	1	...	...	2	
Waterloo .....		2	6	...	...	...	...	...	...	8	1	...	1	10	
Waverley .....		6	4	...	...	...	...	2	...	12	2	1	...	15	
Woolahra .....		7	9	1	...	...	...	...	...	17	3	...	...	20	
Willoughby .....		1	1	...	...	...	...	1	2	5	...	...	...	5	
*Liverpool .....		...	...	...	...	...	...	1	...	1	...	...	...	1	
*The Harbour .....		...	1	1	1	...	...	...	...	3	...	...	...	3	
<b>Totals .....</b>	<b>2</b>	<b>114</b>	<b>159</b>	<b>26</b>	<b>18</b>	<b>1</b>	<b>1</b>	<b>27</b>	<b>19</b>	<b>2</b>	<b>367</b>	<b>82</b>	<b>18</b>	<b>64</b>	<b>533</b>
											Casualties ...				
											2				
											369				

\* Outside the Metropolitan Fire Brigade area.



APPENDIX IX.  
HOURLY and Daily Summary of Calls for 1895.

Hour.	Sunday.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.	Total.
A.M., 1 .....	4	3	3	2	1	4	1	18
" 2 .....	5	1	2	0	0	2	3	13
" 3 .....	2	5	4	1	4	5	3	24
" 4 .....	1	2	0	1	0	1	1	6
" 5 .....	1	1	1	0	0	1	0	4
" 6 .....	1	1	1	0	1	1	1	6
" 7 .....	0	0	1	0	1	2	1	5
" 8 .....	2	2	2	2	0	0	1	9
" 9 .....	0	6	3	1	0	4	2	16
" 10 .....	2	4	1	2	3	1	5	18
" 11 .....	4	3	2	2	3	2	6	22
" 12 .....	1	7	5	3	4	3	2	25
P.M., 1 .....	4	3	6	2	3	2	7	27
" 2 .....	2	4	7	2	5	2	1	23
" 3 .....	2	3	3	5	2	1	2	18
" 4 .....	2	2	4	3	5	0	2	18
" 5 .....	4	7	6	2	2	4	5	30
" 6 .....	4	5	6	5	7	10	10	47
" 7 .....	2	7	3	10	3	6	9	40
" 8 .....	5	6	7	3	13	8	12	54
" 9 .....	5	5	7	4	8	2	9	40
" 10 .....	2	3	4	3	5	2	8	27
" 11 .....	2	3	7	6	2	4	4	28
" 12 .....	2	1	4	3	2	1	2	15
	59	84	89	62	74	68	97	533

APPENDIX X.  
WEEKLY Summary of Calls for 1895.

Week.	Casualties.	False Alarms.	Chimney Fires.	Fires	Totals.	Week.	Casualties.	False Alarms.	Chimney Fires.	Fires.	Totals.
1st ending Jan. 5 ... ..	...	2	1	7	10	29th ending July 20 ... ..	...	2	2	10	14
2nd " " 12 ... ..	...	0	0	5	5	30th " " 27 ... ..	...	0	7	6	13
3rd " " 19 ... ..	...	1	1	5	7	31st " Aug. 3 ... ..	...	2	1	9	12
4th " " 26 ... ..	...	1	0	6	7	32nd " " 10 ... ..	...	0	4	3	
5th " Feb. 2 ... ..	...	0	1	10	11	33rd " " 17 ... ..	...	1	7	5	13
6th " " 9 ... ..	...	0	0	6	6	34th " " 24 ... ..	...	2	5	13	20
7th " " 16 ... ..	...	1	0	1	2	35th " " 31 ... ..	...	9	0	27	36
8th " " 23 ... ..	...	1	0	4	5	36th " Sept. 7 ... ..	...	3	5	14	22
9th " Mar. 2 ... ..	...	3	1	6	10	37th " " 14 ... ..	...	0	4	30	34
10th " " 9 ... ..	...	2	0	5	7	38th " " 21 ... ..	...	3	0	7	10
11th " " 16 ... ..	...	3	0	5	8	39th " " 28 ... ..	...	0	6	7	13
12th " " 23 ... ..	...	0	0	7	7	40th " Oct. 5 ... ..	...	0	0	3	3
13th " " 30 ... ..	...	0	0	6	6	41st " " 12 ... ..	...	1	2	7	10
14th " April 6 ... ..	...	1	0	5	6	42nd " " 19 ... ..	...	1	1	6	8
15th " " 13 ... ..	...	2	0	5	7	43rd " " 26 ... ..	...	1	0	8	9
16th " " 20 ... ..	...	0	0	9	9	44th " Nov. 2 ... ..	...	2	1	3	6
17th " " 27 ... ..	...	3	0	7	10	45th " " 9 ... ..	...	1	1	3	5
18th " May 4 ... ..	...	2	1	8	11	46th " " 16 ... ..	...	2	1	4	7
19th " " 11 ... ..	...	0	2	2	4	47th " " 23 ... ..	...	2	1	8	11
20th " " 18 ... ..	1	2	2	4	9	48th " " 30 ... ..	...	3	0	8	11
21st " " 25 ... ..	...	1	1	2	4	49th " Dec. 7 ... ..	...	1	0	5	6
22nd " June 1 ... ..	...	2	1	6	9	50th " " 14 ... ..	...	1	0	5	6
23rd " " 8 ... ..	...	2	3	9	14	51st " " 21 ... ..	...	2	3	10	15
24th " " 15 ... ..	...	1	4	8	13	52nd " " 28 ... ..	...	3	2	6	11
25th " " 22 ... ..	...	2	3	5	10	to end of year ... ..	...	2	0	1	3
26th " " 29 ... ..	...	2	1	2	5						
27th " July 6 ... ..	1	1	4	10	16						
28th " " 13 ... ..	...	3	3	4	10	Totals .....	2	82	82	367	533

APPENDIX XI.  
MONTHLY Summary of Calls for 1895.

Months.	Casualties.	False Alarms.	Chimney Alarms.		Class of Fire.									Grand Total.
			Attended with engines, and reported as house fires.	Attended with hand-pump only.	Slight.			Serious.			Total destruction.			
					Insured.	Not insured.	Insurance unknown.	Insured.	Not insured.	Insurance unknown.	Insured.	Not insured.	Insurance unknown.	
January	...	4	.....	2	15	8	1	3	...	.....	3	1	.....	37
February	...	5	.....	2	6	4	1	...	.....	4	1	.....	23	
March	...	5	.....	.....	9	10	3	2	...	.....	1	2	.....	32
April	...	6	.....	1	10	8	1	2	...	.....	2	4	.....	34
May	...	7	.....	3	6	6	1	1	...	.....	2	...	.....	33
June	...	8	.....	4	10	11	.....	1	.....	.....	3	.....	1	45
July	...	5	.....	3	13	9	15	1	1	1	3	2	1	55
August	...	14	.....	2	15	8	32	2	4	.....	3	3	.....	84
September	...	7	.....	2	13	18	34	.....	1	.....	2	3	.....	80
October	...	5	.....	1	2	9	8	5	2	.....	1	.....	.....	33
November	...	7	.....	.....	4	7	4	10	1	.....	1	2	.....	36
December	...	9	.....	1	4	7	16	1	.....	.....	2	1	.....	41
Totals { 1895	2	82	18	64	114	159	26	18	1	1	27	19	2	533
{ 1894	...	49	34	56	100	51	55	22	1	.....	24	13	4	409

APPENDIX XII.

COMPARISON of Calls for the period 1885 to 1895.

	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895.	Total.
Casualties	...	...	...	...	...	2	1	1	...	...	2	6
False alarms	42	32	14	35	33	44	52	47	68	49	82	498
Chimney alarms	64	40	60	61	45	52	33	75	75	90	82	677
Fires, slight	160	150	174	222	179	205	216	270	210	206	299	2,291
„ serious	13	21	18	19	17	12	27	21	23	23	20	214
„ total destruction	23	34	15	25	29	18	19	23	25	41	48	300
Totals	302	277	281	362	303	333	348	437	401	409	533	3,086

APPENDIX XIII.

SUMMARY of Causes of Fires for 1895.

Boiling over fat, tar, &c.	15	Lamp, kerosene, carelessness with	2
Burning rubbish	10	„ „ explosion of	2
Burning grass	23	„ „ upsetting of	12
Boiler, overheating of	1	„ „ curtains in contact with	3
Brick-kiln, overheating	1	Lightning	1
Candle	55	Light thrown down	36
Clothes catching fire	1	Lime slaked by rain	1
Doubtful or Unknown	110	Machinery, friction of	1
Furnace, overheating	2	Matches, careless use of	6
Fireworks	2	„ rats at	1
Fluc, defect in	6	„ children playing with	8
Foul chimney	81	Overheating of hot water pipes	1
Gas bracket or burner	7	Smoking meat	2
„ explosion	3	„ tobacco	4
„ apparatus	1	Spark from another fire	7
„ pipe, defect in	2	„ chimney	31
Hot ashes	4	Spontaneous ignition	2
Hearth, defect in	2	Vapour of spirit coming in contact with flame	1
Incendiarism	4		
		Total	451

## APPENDIX XIV.

SUMMARY of how Fires were reported to the Brigade for 1895.

Calls given by.	Casualties.	Fires.	False Alarms.	Chimney Alarms.		Total.
				Reported as House Fires.	Attended by hand-pump only.	
Alexandria Volunteer Fire Company .....		2				2
Ashfield Volunteer Fire Company .....		6	5			11
Balnain Volunteer Fire Company .....		11	3			14
Burwood Volunteer Fire Company .....		9	4			13
Citizen .....		39	7	1	21	68
Drummoyne Volunteer Fire Company .....		1				1
Fire Alarm Telephones .....		106	30	8	20	164
G.P.O., per telephone .....		71	15	5	8	99
Glebe Volunteer Fire Company .....		11			1	12
Granville Volunteer Fire Company .....		2				2
Insurance Company .....		1				1
Kogarah .....		2				2
Leichhardt .....	1	6	4	1		12
Meat Preserving Companies Volunteer Fire Company .....		1				1
Night Watchmen .....		2				2
North Botany Volunteer Fire Company .....		3				3
North City Volunteer Fire Company .....	1	1	1		2	5
Paddington Volunteer Fire Company .....		15	3		3	21
Paddington Brewery Volunteer Fire Company .....		6				6
Parramatta, No. 1 .....		4				4
Parramatta, No. 2 .....		4				4
Police Stations, per telephone .....		27	1	1	6	35
Railway Department .....		1		1		2
Randwick Volunteer Fire Company .....		2				2
Rockdale Volunteer Fire Company .....		5	3			8
Seen from Station .....		3	1			4
Standard Brewery Volunteer Fire Company .....		4			2	6
Tower, Head-quarters Station .....		8	2			10
St. Leonards Volunteer Fire Company .....		3				3
Waterloo Volunteer Fire Company .....		2	1		1	4
Waverley Volunteer Fire Company .....		6	2	1		9
Woollahra Volunteer Fire Company .....		3				3
<b>Totals</b> .....	<b>2</b>	<b>367</b>	<b>82</b>	<b>18</b>	<b>64</b>	<b>533</b>

1896.

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LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

---

REPORT FROM THE SELECT COMMITTEE

ON

OLD-AGE PENSIONS;

TOGETHER WITH THE

PROCEEDINGS OF THE COMMITTEE,

MINUTES OF EVIDENCE,

AND

APPENDIX.

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*Printed under No. 18 Report from Printing Committee, 17 September, 1896.*

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SYDNEY: CHARLES POTTER, GOVERNMENT PRINTER.

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1896.

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1896.

EXTRACTS FROM THE VOTES AND PROCEEDINGS OF THE  
LEGISLATIVE ASSEMBLY.

VOTES No. 16. TUESDAY, 16 JUNE, 1896.

7. OLD-AGE PENSIONS:—Mr. Neild moved, pursuant to Notice,—

(1.) "That," in the opinion of this House, old-age pensions or outdoor relief should, as far as possible, be substituted for the existing asylum system.

(2.) That the Government should take the necessary steps to bring about the change in question without delay.

Debate ensued.

Mr. O'Sullivan moved,—That the Question be amended by leaving out all the words after the word "That," and inserting the words "a Select Committee be appointed to consider and report upon the subject of State Insurance or Old-age and Invalidity Pensions.

"(2.) That such Committee consist of Mr. Neild, Mr. O'Sullivan, Mr. Chapman, Mr. O'Reilly, Mr. Bull, Mr. Haynes, Dr. Graham, Mr. Cook, Mr. McGowen, and Mr. McLean," instead thereof.

Question proposed,—That the words proposed to be left out stand part of the Question.

Debate continued.

Question put,—That the words proposed to be left out stand part of the Question.

The House divided.

Ayes, 10.

Dr. Ross,  
Mr. Hogue,  
Mr. Haynes,  
Mr. Edden,  
Mr. Black,  
Mr. Simeon Phillips,  
Mr. Nicholson,  
Mr. James Thomson.

*Tellers,*

Mr. Neild,  
Mr. Thomas.

Noes, 54.

Mr. M. T. Phillips,  
Mr. See,  
Mr. Willis,  
Mr. Copeland,  
Mr. Wright,  
Mr. O'Sullivan,  
Mr. Schey,  
Mr. Jessep,  
Mr. Chapman,  
Mr. Sydney Smith,  
Mr. Brunker,  
Mr. Perry,  
Mr. Newman,  
Mr. Hurley,  
Mr. Travers Jones,  
Mr. McFarlane,  
Mr. Carroll,  
Mr. Barnes,  
Mr. Lyne,

Mr. Pyers,  
Mr. Mackay,  
Mr. Ferguson,  
Mr. Wood,  
Mr. Thomas Brown,  
Mr. Macdonald,  
Mr. Watkins,  
Mr. Anderson,  
Mr. Whiddon,  
Mr. Gould,  
Mr. Bavister,  
Mr. Millard,  
Mr. Cruickshank,  
Mr. Hughes,  
Mr. Hawthorne,  
Mr. Wilks,  
Mr. Cook,  
Mr. Ball,  
Mr. Wheeler,

Mr. Reid,  
Mr. Cann,  
Mr. Smailes,  
Mr. Lonsdale,  
Mr. Cotton,  
Mr. Young,  
Mr. Goodwin,  
Mr. Affleck,  
Mr. McGowen,  
Mr. Fegan,  
Mr. Miller,  
Mr. Garrard,  
Mr. Law,  
Mr. Morgan.

*Tellers,*

Mr. Moore,  
Mr. McLean.

And so it passed in the negative.

And Mr. Anderson requiring that the Committee be appointed by Ballot,—

Question put,—That the words proposed to be inserted in the place of the words left out be so inserted,—and voices given,—Mr. Speaker stated his opinion that the *Ayes* had it.

Whereupon Division called for, and Mr. Speaker having, in accordance with Standing Order No. 213, directed the Members to take their seats to the right and left of the Chair respectively, declared the determination of the House to be in the *affirmative*, as there were only two Members in the minority who had challenged his decision.

The following are the names of the Members in the minority, viz.:—Mr. Hogue and Mr. Affleck.

Question, as amended,—

(1.) That a Select Committee be appointed to consider and report upon the subject of State Insurance or Old-age and Invalidity Pensions.

(2.) That such Committee consist of

\* \* \* \* \*

put and passed.

Whereupon the House proceeded to the Ballot, and Mr. Speaker declared the following to be the Committee duly appointed:—Mr. O'Sullivan, Mr. Cook, Mr. Neild, Dr. Graham, Mr. Chapman, Mr. McLean, Mr. Wilks, Mr. McGowen, Mr. O'Reilly, and Mr. Schey.

## VOTES No. 21. THURSDAY, 25 JUNE, 1896.

3. OLD-AGE PENSIONS:—Ordered, on motion of Mr. O'Sullivan, that the following Message be carried to the Legislative Council:—

MR. PRESIDENT,—

The Legislative Assembly having appointed a Select Committee on "Old-age Pensions," and the Committee being desirous to examine the Honorable Sir Arthur Renwick, Knight, a Member of the Legislative Council, in reference thereto, requests that the Legislative Council will give leave to its said Member to attend and be examined by the said Committee on such day and days as shall be arranged between him and the said Committee.

*Legislative Assembly Chamber,  
Sydney, 25th June, 1896.*

13. OLD-AGE PENSIONS:—Mr. Speaker reported the following Message from the Legislative Council:—

MR. SPEAKER,—

In answer to the Message from the Legislative Assembly, dated the 25th June, 1896, requesting leave for the Honorable Sir Arthur Renwick, Knight, a Member of the Legislative Council, to attend and be examined before a Select Committee of the Legislative Assembly on "Old-age Pensions," the Council acquaints the Assembly that leave has been granted to its said Member to attend and be examined by the said Committee if he think fit.

*Legislative Council Chamber,  
Sydney, 25th June, 1896.*

JOHN LACKEY,  
President.

## VOTES No. 24. THURSDAY, 2 JULY, 1896.

3. OLD-AGE PENSIONS:—Ordered, on motion of Mr. O'Sullivan, that the following Message be carried to the Legislative Council:—

MR. PRESIDENT,—

The Legislative Assembly having appointed a Select Committee on "Old-age Pensions," and the Committee being desirous to examine the Honorable Andrew Garran, LL.D., the Honorable Henry Norman MacLaurin, M.D., LL.D., and the Honorable Louis Francis Heydon, Members of the Legislative Council, in reference thereto, requests that the Legislative Council will give leave to its said Members to attend and be examined by the said Committee on such day and days as shall be arranged between them and the said Committee.

*Legislative Assembly Chamber,  
Sydney, 2nd July, 1896.*

11. OLD-AGE PENSIONS:—Mr. Speaker reported the following Message from the Legislative Council:—

MR. SPEAKER,—

In answer to the Message from the Legislative Assembly, dated the 2nd July, 1896, requesting leave for the Honorable Andrew Garran, the Honorable Henry Norman MacLaurin, and the Honorable Louis Francis Heydon, Members of the Legislative Council, to attend and be examined before a Select Committee of the Legislative Assembly on "Old-age Pensions," the Council acquaints the Assembly that leave has been granted to its said Members to attend and be examined by the said Committee if they think fit.

*Legislative Council Chamber,  
Sydney, 2nd July, 1896.*

JOHN LACKEY,  
President.

## VOTES No. 56. WEDNESDAY, 16 SEPTEMBER, 1896.

12. OLD-AGE PENSIONS:—Mr. O'Sullivan, as Chairman, brought up the Report from, and laid upon the Table the Minutes of Proceedings of, and Evidence taken before, the Select Committee for whose consideration and Report this subject was referred on 16th June, 1896; together with Appendix.

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1896.

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**OLD-AGE PENSIONS.**


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**REPORT.**


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THE SELECT COMMITTEE of the Legislative Assembly, appointed on 16th June, 1896, to consider and report upon the subject of *State Insurance or Old-age and Invalidity Pensions*, have agreed to the following Report:—

Your Committee find, from the extensive literature on the question of old-age pensions, that the subject is now engaging the attention of the leading statesmen, philosophers, and sociologists in Europe and elsewhere, and there can be no doubt that the proposal is well within the range of practical politics. Your Committee have inquired into the matter at considerable length, and after carefully studying the mass of information collected in the form of evidence, reports, enactments, and writings, they have arrived at the conclusion that it is both desirable and practicable to establish the following

*Recommendations.*

1. A system of old-age pensions by which every person in the community who is above the age of 60 years, who has been a resident of New South Wales for 15 years, and whose income does not exceed £50 per annum, should be entitled to a pension of 10s. per week when single, while married couples should be granted 15s. per week.
2. A system of invalidity pensions under which a sum of 10s. per week shall be paid to all persons who are sick or infirm (such pension to last while the invalidity prevails), provided that the recipient has subscribed 1s. per month for a period of five years to an invalidity fund worked through the medium of some Friendly Society of which the recipient is a member.
3. The boarding out of the more robust of the patients now in the Government old-age asylums, according to the circumstances of the case, namely:—
  - (a) By boarding them out with relatives at the rate of 10s. per week each, and 15s. for married couples.
  - (b) By boarding them out at the same rate with strangers, when relatives are unable or unwilling to receive them.
  - (c) By granting them pensions of 10s. per week each, or 15s. for married couples, and permitting them to provide for themselves, when they wish to do so.

All such cases should be subjected to a kindly but non-inquisitorial supervision by the inspectors who now have charge of the children boarded out by the State. The beneficial effect of boarding out these inmates would be twofold. In the first place, the old people boarded out would live in a healthy and bracing atmosphere, while their presence in country homes would be a safeguard for the wives and children of farmers and selectors when the head of the household was away; at the same time, the payment of the 10s. per week would be of material assistance to struggling settlers in the payment of their rent and other expenses. Your Committee would recommend as a tentative measure that (say) 100 persons who may be deemed most suitable for such an experiment be selected from the present inmates of the Government Asylums; that they be boarded out, part with their friends, and part otherwise, and that careful notice be taken of their welfare, comfort, satisfaction, &c., and that after twelve months a careful and comprehensive report be compiled as to the results. Should the report be favourable, a larger and wider experiment might then be entered upon in the light of the experience already gained.

*Arguments*

*Arguments in favour of Old-age Pensions.*

Pensions, when properly safeguarded and applied, are not objectionable from a democratic point of view. In the Republic of the United States the sum of £382,352,900 had been expended up to the end of 1895 upon the soldiers and sailors who fought for the Union in the great civil war and preceding conflicts from 1812. The payments for 1895 were 140,959,361 dollars, and there were then 751,456 invalids and 219,068 widows in receipt of these pensions. Great Britain also makes a fair provision for her disabled or aged soldiers and sailors. To some of the latter, outdoor pensioners of Greenwich Hospital, the average paid is £36 per year, while petty officers receive as high as £45 and £50 per year. Other countries also make liberal provision for aged or disabled soldiers and sailors. These are concessions to which no objection can be taken, save on the ground of abuse—a complaint sometimes alleged against the American system. Your Committee are therefore of opinion that while it is right to concede these pensions to aged or disabled men who have served their country on land or sea, it is equally just and humane to provide for the old age of all persons who have for a fair period assisted to create our civilisation, aided in the development of the resources of the country, and helped to bear the public burdens of the community by the payment of taxes. They hold, in fact, that men and women may serve their country as well in the paths of peace as soldiers and sailors do in time of war, and the former are, therefore, just as worthy of consideration as the latter.

*Safeguards for the System.*

As necessary precautions for the safeguarding of this provision of old-age pensions from abuse, your Committee would suggest that the following conditions should be imposed, in addition to those already stipulated:—

1. That the recipient is residing in the Colony at the date when the claim to the pension is established.
2. That the recipient has resided continuously for not less than three years immediately preceding the date of application, and intends to continue to reside in New South Wales. Such pension to be forfeited in the event of the recipient leaving the Colony; reasonable provision being allowed for temporary absence.
3. That the recipient is not the holder of a pension or allowance of 10s. per week from other sources.
4. That where the recipient has been in prison, the time thus lost to the community should be deducted from the fifteen years' residence necessary to establish a claim to an old-age pension.

*The Old-age Pension to go as a Free Gift from the State.*

That as the evidence shows that the compulsory system of State insurance or old-age pensions as worked in Germany is unsatisfactory to the working classes there, and would be likely to be still more objectionable to people of British origin, and also that a contributory scheme would not be generally sustained by the working classes, your Committee recommend that the old-age pensions should go as a free gift from the State in recognition of services rendered to it. The pension should be conceded as a right, not as a pauper dole, and its reception ought not in any way to be looked upon as making an invidious distinction. The invalidity pension being an extra benefit, in which all persons may participate for a small payment per month, your Committee think it possible that such a scheme might be worked on the voluntary contribution plan, more especially if country post-offices were utilised as a means of aiding the Friendly Societies to collect the money. The scheme would also have the effect of making Friendly Societies more largely availed of.

*Cost of the System Recommended.*

The evidence of the actuarial experts cited by the Committee goes to show that a system of old-age pensions to apply to all persons over 60 years of age would cost about £1,400,000 per year. Such a scheme is beyond the financial compass of the community, and your Committee therefore, while admitting the justice of allowing all taxpayers to participate in such a benefit, have been compelled to confine

confine their recommendation to a scheme of reasonable proportions—that is, for all persons over 60 who are in receipt of less than £50 per year, and have been fifteen years in the country. After making due allowance for the reduction of 5s. per week, saved with regard to married couples, for the large number of persons who will prefer to go on working after they have reached 60, and for those provided for by Friendly Societies or from other sources, it is estimated that the scheme recommended by your Committee could be worked for about £90,000 per annum. The Director of Charities, in his evidence, gives the sum of £36,634 per year as the amount that would be required to provide for all persons now receiving outdoor and indoor relief, exclusive of the asylums; but there is a great deal of poverty amongst elderly persons outside of those referred to by Mr. Sydney Maxted, and to provide for all persons above 60 in necessitous circumstances your Committee estimate that it will be necessary to add about £53,000 more, making a total of £90,000 per annum as the cost of the scheme recommended.

*Sources of Fund to maintain the System.*

Having thus outlined a scheme for old-age and invalidity pensions, your Committee now proceed to suggest the means by which the plan may be worked in a practical manner. In doing so, they are guided by the idea that some of the causes of poverty should be made the means of assisting to alleviate the distress they help to create. When people are given to self-indulgence and pleasure they are not likely to complain of a small addition to their expenditure. This would certainly be the case when they knew that the extra payments would go to make provision for their own old age, should misfortune overtake them, and remove that feeling of despair—an incentive to drink—which comes over many necessitous people when they reflect upon the blank and desolate future which lies before them. A tax upon pleasure and self-indulgence is, therefore, defensible on the ground that those who pay such an impost are entitled to share in the benefit of old-age pensions. In France a proportion of the profits of theatres is devoted to charities. In Denmark the old-age pensions are sustained by a tax upon lager beer. As the sport of horse-racing is largely productive of distress, your Committee have determined to utilise this prominent feature in the amusements of the people of this country as one of the means of revenue. They therefore recommend the following as a scheme for raising a sufficient amount of money per year for old-age pensions, without adding materially to the burdens of the people:—

	Per annum.
The legalisation of the totalisator, from which it is expected that a tax of 3½ per cent. will give ...	£35,000
The revenue from billiard licenses . . . . .	8,000
Fines for drunkenness and breaches of the Licensing Act, estimated at ... . . . .	6,000
Entertainment and sports tax of 1d. per ticket, estimated at . . . . .	8,000
A 2 per cent. donation from the revenue received from wines, spirits, tobacco, opium, and cigars (a total of £1,105,701) ... . . . .	22,000
Saving on the cost of 25 per cent. of the inmates now in the Asylums ... . . . .	11,000
Total ... . . . .	£90,000

By the foregoing it will be seen that a sum ample for the purposes of sustaining the old-age pension fund recommended by your Committee can be obtained without in any way distressing the community. There need be no extra duties imposed upon wines, spirits, tobacco, cigars, &c., for it ought to be an easy matter for any careful Government to save the sum of £36,000 per year—the loss entailed by devoting the percentage of revenue from wines, spirits, &c., the billiard licenses, and the fines for drunkenness, &c., to an old-age pension fund. While the necessary money will thus be raised for the object suggested, it is expected that the introduction of the totalisator will tend to rid the sport of horse-racing of some of its evils.

*Study*

*Study of Appendices Recommended.*

Your Committee would commend to the Members of your Honorable House the desirability of carefully studying the literature on the question of old-age pensions contained in the Appendices, in which many valuable ideas and suggestions will be found. The Bill of the New Zealand Government and the draft measure submitted by Mr. W. F. Schey, M.P., a member of this Committee (dealing with a tentative proposal for voluntary contribution), are also worthy of your attention.

*Synopsis of various Old-age Pension proposals.*

The following is a summary of the plans for old age and invalidity pensions now being worked or considered by various nations in Europe, Great Britain, and elsewhere:—

The first prominent fact that has struck your Committee is, that outside of private saving and endowment insurance, there is practically no provision for old age.

Although, at least, two of them are taking steps in this direction, none of our Friendly Societies provide for old age to any great extent. They confine their operations mainly to sickness, death, and burial. Some of them, under the name of superannuation, provide for old age and disability; and by thus providing a sort of old-age pension, under the name of sick relief, tend to reduce their financial soundness, as their contributions are based on statistics of sickness alone.

Many schemes have been propounded for old-age pensions, some eighteen having been put forward, mostly in England, during the last fifteen years, none of which have, up to date, been put into force in any country. Of these, four are on the basis of specific and compulsory contribution to create a specific fund; nine for the creation of a specific fund by voluntary contributions; and five more or less directly compulsory and providing pensions for all, without any direct contributions from the individual. Particulars of these will be found in the Appendices.

In addition, provident schemes directly administered by the State are in active operation in Germany, Denmark, and Austria. In Germany the old age law is compulsory on all men and women over 16 years of age in the following three classes—(1) Persons who are employed as workmen, assistants, apprentices, or servants, and receive for their services payment or wage; (2) persons who are engaged in business as assistants in shops, and apprentices whose yearly earnings do not exceed £100; (3) persons employed for payment or wage as members of the crews of German ships. The benefits are:—After five years' payments, invalidity allowance may be claimed, ranging from £5 14s. 8½d. to £7 0s. 3d. per annum, and from 70 years of age a pension ranging from £5 6s. 5d. to £9 11s. per annum, according to the wages received, which are divided into four classes. If death occurs before 70 years, one-half of the contributions is returned. Payments to the fund are 1½d. to 3d. per week, half paid by the employer, and half by the employee, the State merely enforcing, administering, and guaranteeing benefits.

In Denmark, since 1891, all *poor* over 60 are assisted. They are divided into *deserving* poor, to whom pensions are paid; and *undeserving* poor, to whom poor relief is given. Administration is by public but local authorities, who raise the necessary funds by a local rate, the whole being assisted by a contribution of about £111,000 per annum derived from a tax on lager beer. The fund is entirely distinct from parish relief, and the system is said to be very popular with all classes of the people except the loafers, whose lot is made harder by its enactment.

In Austria it appears that every man can claim a pension. The Emperor Joseph II decided that at 60 a man should have the right to claim from his native town or commune a pension equal to one-third of the average daily wage he had received during his working years. This pension was to be regarded in exactly the same light as the soldier's pension—not as a charity, but as a reward for past services. In Vienna are six old-age homes, an institution peculiar to Austria, the first of which was instituted as far back as the thirteenth century by the citizens of Vienna. Inmates may wear any clothes, and no uniform is permitted. They may have their own furniture so far as minor articles are concerned, and, instead of being provided with food, each inmate is allowed 26 kreuzers (about 5d.) per day to purchase just what they wish. A special restaurant is provided under strict supervision, and all food is supplied at contract prices. Otherwise it is carried on exactly the same as any other restaurant in the city. Improper expenditure entails first  
warning,

warning, then stoppage; and bad conduct causes exclusion from the home. Similar homes exist in various parts of the empire and seem to be popular and well liked both by the inmates and the people at large.

In Holland there is a voluntary pension fund, to which a number of employers pay an amount nearly equivalent to that paid by their employees. At present it covers only a few of the larger employers and their workmen, amounting to a few thousands only. It was established in 1888, and seems to be well thought of in its own country.

In Italy the Legislature discussed the subject in 1883, and in July, 1890, a Committee of the Chamber of Deputies presented a favourable report on a Bill to institute a State-aided scheme. A fund was to be founded by voluntary contributions, not necessarily continuous, and not beyond a yearly maximum of £25 per individual. The State was to add a small subsidy, but not to be responsible for benefits. Pensions according to payments made were to be payable at 60 to those who had subscribed for twenty years, and no pension was to exceed £25 per annum. The fund was to be open only to Italian workmen and workwomen belonging to some mutual aid society.

France has an old-age pension fund since 1850, the State assisting by a guarantee of 5 per cent. compound interest on all payments made by work-people, male and female. The fund has been used mainly by Government servants, priests, school-teachers, and small investors who wish good interest. Consequently it has largely failed to benefit the class it was intended for; and less than a million subscribers. The average amount of pensions is very small and does not exceed £2 14s. per annum. The French Government, however, a year or two ago, laid before the Chamber of Deputies the boldest financial scheme of State-aided pensions for old age which has yet been proposed in Europe. Under it contributions to a national fund are to be paid—three-tenths by the employer, three-tenths by the workman, and four-tenths by the State. Advantage is to be taken of existing benefit and similar societies in the collection of contributions and the payment of pensions. Membership is to be purely voluntary, and contributions to vary from a minimum of  $\frac{1}{2}$ d. per day to a maximum of 1d. per day while employed. Persons are expected to become contributors at 25, and to pay in for thirty years, after which time pension may be claimed, but must not exceed a total income to any individual of £24 (600f.) per annum. Membership is to be open only to those whose annual income does not exceed 3,000 francs (£120) per annum. The fund is to draw some 100,000 francs (£4,000) per annum from a tax on foreign workmen at the rate of 10 centimes (1d.) per day *per capita*, to be paid in every case by the employer of such foreigner.

In New Zealand there is now a Bill before the Legislature providing for old-age pensions for all persons whose income does not exceed £50 per year, who have been twenty years in that Colony.

*Thanks for Assistance.*

In conclusion, your Committee desire to place on record their appreciation of the valuable assistance they received from the various witnesses examined, and also from Mr. William S. Mowle, the Clerk of Select Committees of the Legislative Assembly.

E. W. O'SULLIVAN,  
Chairman.

No. 2 Committee Room,  
Legislative Assembly,  
16th September, 1896.

## PROCEEDINGS OF THE COMMITTEE.

THURSDAY, 18 JUNE, 1896.

MEMBERS PRESENT:—

Mr. Cook,		Dr. Graham,
Mr. McLean,		Mr. Neild,
Mr. O'Reilly,		Mr. O'Sullivan,
	Mr. Schey.	

Mr. O'Sullivan called to the Chair.

Entry from Votes and Proceedings, appointing the Committee, read by the Clerk.

Resolved,—That the Committee meet on Wednesday and Thursday in each week.

Ordered,—That the Government Statistician and Mr. Sydney Maxted be summoned to give evidence next meeting.

[Adjourned till Wednesday next at a Quarter to Three o'clock.]

WEDNESDAY, 24 JUNE, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Mr. Chapman,		Dr. Graham,
Mr. McLean,		Mr. Neild,
Mr. Schey,		Mr. Wilks.

The Chairman read a statement, which he had prepared, in reference to the witnesses proposed to be examined, the questions to be put to each witness, and the reports and other documents to be appended.

Ordered (*on motion of Dr. Graham*) to be printed and distributed to members of the Committee.William Ridley (*Acting Government Statistician*) called in, sworn, and examined.Witness handed in Return from Census of 1891, showing population of New South Wales, also occupations of persons of 65 years and upwards. [*Appendix A.*]

Witness withdrew.

George Henry Pitt (*Chief Compiler, Statistician's Office*) called in, sworn, and examined.

Witness withdrew.

[Adjourned till To-morrow at a Quarter to Three o'clock.]

THURSDAY, 25 JUNE, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Mr. Chapman,		Dr. Graham,
Mr. McGowen,		Mr. McLean,
Mr. O'Reilly,		Mr. Schey,
	Mr. Wilks.	

Motion made (*Mr. O'Reilly*) and Question,—“That the representatives of Friendly Societies be requested to nominate representatives to give evidence before the Committee,”—put and passed.Motion made (*Mr. Wilks*) and Question,—“That the proposals for the conduct of the inquiry, submitted by the Chairman at the last meeting, be adopted, subject to future additions,”—put and passed.

The Chairman read a letter from Mr. Wm. Ridley, Acting Government Statistician, in reference to the number of persons whom he considered would be benefited by a system of “Old-age Pensions,” as against the present Asylum system.

Sydney Maxted (*Director of Charitable Institutions*) called in, sworn, and examined.

Witness withdrew.

[Adjourned till Wednesday next at Half-past Two o'clock.]

WEDNESDAY, 1 JULY, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Mr. Chapman,		Mr. Neild,
Dr. Graham,		Mr. McGowen,
	Mr. Schey.	

The Clerk read the entries from Votes and Proceedings, containing Message to Legislative Council requesting leave for Sir Arthur Renwick to attend and be examined before the Committee, and Message from Council, intimating that leave had been granted to its said Member to attend and be examined if he think fit.

Sydney Maxted recalled and further examined.

Witness handed in copy of Dietary Table adopted in 1888 for the Benevolent Asylums. [*Appendix B 1.*]Blank form to be filled in, showing the history of each person admitted to a charitable institution. [*Appendix B 2.*]For admission for the country. [*Appendix B 3.*]

Ordered,—That Mr. G. H. Pitt, Chief Compiler, Statistician's Office, be summoned to give evidence next meeting, and that a letter be written to Sir Arthur Renwick, requesting his attendance on Wednesday next.

[Adjourned till To-morrow at a Quarter to Three o'clock.]

THURSDAY,

THURSDAY, 2 JULY, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Mr. Chapman,		Dr. Graham,
Mr. McGowen,		Mr. McLean,
Mr. Schey,		Mr. Wilks.

George Henry Pitt recalled and further examined.

Witness handed in List of Friendly Societies, together with particulars of each. [*Appendix B 4.*]

Witness withdrew.

[Adjourned till Wednesday next at a Quarter to Three o'clock.]

WEDNESDAY, 8 JULY, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Mr. Chapman,		Dr. Graham,
Mr. McLean,		Mr. Schey,
	Mr. Wilks.	

The Clerk, by direction of the Chairman, read entries from Votes and Proceedings, containing Message to Council asking leave for the Honorable Andrew Garran, LL.D., the Honorable Henry Norman MacLaurin, M.D., LL.D., and the Honorable Louis Francis Heydon, to attend and give evidence before the Committee, and Message from Council, intimating that leave had been granted to its said Members to attend and be examined if they think fit.

The Clerk then, by direction of the Chairman, read a letter from Mr. G. H. Pitt, Chief Compiler, Statistician's Office, containing certain information obtained from Colonel Bell, U.S. Consul, on the question of State Pensions.

Ordered to be appended. [*See Appendix D.*]

Sir Arthur Renwick (*a Member of the Legislative Council*) called in, sworn, and examined.

Witness withdrew.

[Adjourned till To-morrow at a Quarter to Three o'clock.]

THURSDAY, 9 JULY, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Dr. Graham,		Mr. McLean,
Mr. O'Reilly,		Mr. Schey,
	Mr. Wilks.	

Edmund Walcott Fosbery (*Inspector-General of Police*) called in, sworn, and examined.

Witness withdrew.

[Adjourned till Wednesday next at a Quarter to Three o'clock.]

WEDNESDAY, 15 JULY, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Mr. Chapman,		Dr. Graham,
Mr. McGowen,		Mr. Schey.

Joseph Creer (*Superintendent, Government Labour Bureau*) called in, sworn, and examined.

Witness withdrew.

Robert Thompson Paton (*Government Medical Officer and Vaccinator*) called in, sworn, and examined.

Witness withdrew.

Edward Maxted (*Manager of the Sydney Benevolent Asylum*) called in, sworn, and examined.

Witness withdrew.

[Adjourned till To-morrow at a Quarter to Three o'clock.]

THURSDAY, 16 JULY, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Mr. Chapman,		Dr. Graham,
Mr. McGowen,		Mr. McLean,
Mr. O'Reilly,		Mr. Schey,
	Mr. Wilks.	

Edward Maxted recalled and further examined.

Witness withdrew.

James Anderson called in, sworn, and examined.

Witness withdrew.

George Henry Marsh called in, sworn, and examined.

Witness withdrew.

Alfred Davis (*Registrar of Friendly Societies and Trade Unions*) called in, sworn, and examined.

Witness withdrew.

[Adjourned till Wednesday next at a Quarter to Three o'clock.]

WEDNESDAY,

WEDNESDAY, 22 JULY, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Mr. O'Reilly, | Mr. Schey.

Alfred Davis recalled and further examined.

Witness handed in list of the principal Orders, and particulars of sick and funeral benefits under their rules. [Appendix E 1.] Statement showing the position of the various Orders, together with receipts and expenditure for the year 1893, the amount of funds at the beginning and end of that year, also the number of members. [Appendix E 2.]

Witness withdrew.

[Adjourned till To-morrow at a Quarter to Three o'clock.]

THURSDAY, 23 JULY, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Mr. Chapman, | Dr. Graham,  
Mr. Schey, | Mr. Wilks.

Cornelius Joseph Morrissey called in, sworn, and examined.

Witness withdrew.

[Adjourned till Wednesday next at a Quarter to Three o'clock.]

WEDNESDAY, 29 JULY, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Mr. Chapman, | Dr. Graham,  
Mr. McLean, | Mr. Schey,  
| Mr. Wilks.

Herbert Harrington Greene called in, sworn, and examined.

Witness withdrew.

The Chairman handed in copy of Report from Select Committee of House of Representatives, New Zealand, on the question of "Old-age Pensions"; also copy of "Old-age Pensions Bill" (N.Z.)

Ordered to be appended. [Appendix F and F 2.]

John Alexander McCubben called in, sworn, and examined.

Witness withdrew.

Matthew Prideaux called in, sworn, and examined.

Witness withdrew.

Thomas John Iredale called in, sworn, and examined.

Witness withdrew.

John Hampton called in, sworn, and examined.

Witness withdrew.

[Adjourned till To-morrow at a Quarter to Three o'clock.]

THURSDAY, 30 JULY, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Dr. Graham, | Mr. McGowen,  
Mr. O'Reilly, | Mr. Schey,  
| Mr. Wilks.

John Maxwell Main (*City Missionary*) called in, sworn, and examined.

Witness withdrew.

Joseph Aloysius Beattie (*Medical Superintendent, Liverpool Asylum*) called in, sworn, and examined.

Witness withdrew.

[Adjourned till Wednesday next at a Quarter to Three o'clock.]

WEDNESDAY, 5 AUGUST, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Dr. Graham, | Mr. McLean,  
Mr. Schey, | Mr. Wilks.

The Chairman handed in copy of Workhouse Act, 30 Vic. No. VI [Appendix G 1]; and read a letter from Mr. Alfred Davis, Registrar of Friendly Societies and Trade Unions, forwarding estimate of amount required to provide a pension for all persons of 60 years and upwards and 65 years and upwards. [Appendix G 2.]

David Carment (*Assistant Actuary, Australian Mutual Provident Society*) called in, sworn, and examined.

Witness withdrew.

William Roadley Dovey (*Actuary, Citizens Life Assurance Society*) called in, sworn, and examined.

Witness handed in extracts from speeches by J. P. Garvan, Esq., Managing Director, Citizens Life Assurance Society, delivered at general meetings in 1895 and 1896 [Appendix H 1]; copy of article from Bankers' Magazine on the subject of Friendly Societies' Old-age Pension Schemes [Appendix H 2].

Witness withdrew.

[Adjourned till To-morrow at a Quarter to Three o'clock.]

THURSDAY,

13

THURSDAY, 6 AUGUST, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Dr. Graham,  
Mr. McGowen,|  
Mr. Wilks.Mr. McLean,  
Mr. Schey,

Henry Norman MacLaurin, M.D., LL.D. (*a Member of the Legislative Council*), called in, sworn, and examined.

Witness withdrew.

Andrew Garran, LL.D. (*a Member of the Legislative Council*), called in, sworn, and examined.

Witness withdrew.

[Adjourned till Wednesday next at a Quarter to Three o'clock.]

WEDNESDAY, 12 AUGUST, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Dr. Graham,

|  
Mr. Schey.

Francis Kirkpatrick (*Under Secretary for Finance and Trade*) called in, sworn, and examined.

Witness withdrew.

Elizabeth Lilla Murray (*Matron, Brush Farm*) called in, sworn, and examined.

Witness withdrew.

Rev. Frederick Bertie Boyce called in, sworn, and examined.

Witness withdrew.

Hugh McLachlan (*Secretary to the Railway Commissioners*) called in, sworn, and examined.

Witness handed in scheme for the formation of Railway Employees Provident and Pension Fund.

[Appendix I.]

Witness withdrew.

[Adjourned till To-morrow at a Quarter to Three o'clock.]

THURSDAY, 13 AUGUST, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Dr. Graham,  
Mr. Schey,|  
Mr. O'Reilly,  
Mr. Wilks.

The Chairman read a letter from Mr. Sydney Maxted, Director of Charitable Institutions, giving the probable number of deserving poor over 60 years of age in the Colony (outside the Government asylums) likely to be brought under the operations of a pension fund for that class. [Appendix J.]

Ordered to be appended.

William Francis Schey (*a Member of the Committee*) sworn and examined.

Witness handed in newspaper articles, by Dr. W. A. Hunter, on "Pensions for Old Age and Provident Assurance for the Working Man" [Appendix K 1]; article from "Nineteenth Century" for August, 1895, by Miss Edith Sellars, on "Old-age Homes in Austria" [Appendix K 2], Draft of Old-age Provision Bill [Appendix K 3].

Joseph Benjamin Oliffe (*Secretary of Tattersall's Club*) called in, sworn, and examined.

Witness withdrew.

Thomas Strettel Clibborn (*Secretary of the Australian Jockey Club*) called in, sworn, and examined.

Witness withdrew.

Reassembling of the Committee to be arranged by the Chairman.

Adjourned.

THURSDAY, 3 SEPTEMBER, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan,

|  
Mr. Wilks.

In the absence of a Quorum, the meeting called for this day lapsed.

TUESDAY, 8 SEPTEMBER, 1896.

MEMBERS PRESENT:—

Mr. O'Sullivan in the Chair.

Dr. Graham,

|  
Mr. Schey.

Mr. O'Reilly,

Committee deliberated.

The Chairman read a letter from S. R. Haseltine, Esq., Secretary of the Adelaide Racing Club, containing information in reference to the working of the Totalisator in Adelaide.

Ordered to be appended. [Appendix L.]

[Adjourned till Tuesday next at half-past Two o'clock.]

TUESDAY, 15 SEPTEMBER, 1896.

MEMBERS PRESENT :—

Mr. O'Sullivan, | Mr. Schey.

In the absence of a Quorum, the meeting called for this day lapsed.

WEDNESDAY, 16 SEPTEMBER, 1896.

Mr. O'Sullivan in the Chair.

Dr. Graham, | Mr. McLean,  
Mr. Schey, | Mr. Wilks.

The Chairman handed in newspaper paragraph referring to the levying of a tax on theatre receipts in Paris, and the handing over of portion of the stakes from the Grand Prix de Paris towards the support of the poor. [*Appendix M.*]

The Chairman then presented Draft Report, which was read a first time *pro formâ*.

Report considered.

Paragraphs 1 to 6 read, amended, and agreed to.

Paragraph 7 read and amended.

Question put,—“That the paragraph as amended stand part of the Report.”

Committee divided.

Ayes.	No.
Dr. Graham, Mr. Schey, Mr. Wilks.	Mr. McLean.

And so it was resolved in the affirmative.

Paragraphs 8, 9, and 10 read, amended, and agreed to.

Chairman to report to the House.

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1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

MINUTES OF EVIDENCE

TAKEN BEFORE

THE SELECT COMMITTEE

ON

OLD-AGE PENSIONS.

WEDNESDAY, 24 JUNE, 1896.

Present:—

MR. CHAPMAN,		MR. NEILD,
DR. GRAHAM,		MR. O'SULLIVAN,
MR. McLEAN,		MR. SCHEY,
	MR. WILKS.	

E. W. O'SULLIVAN, ESQ., IN THE CHAIR.

Mr. William Ridley called in, sworn, and examined:—

1. *Chairman.*] What position do you occupy? I am Acting Statistician.
2. Can you lay before us any information concerning the question of pauperism in New South Wales and the adjoining colonies? Yes; I have some information here which I will read to the Committee. The first is as to the definition of a "pauper." I consider a pauper to be a person absolutely dependent upon the State or public charity. Children (persons under fifteen years of age), insane, and inmates of hospitals and reformatories do not come under this category. As the inmates of many of the institutions conducted by various organisations are, as a rule, required to work, there are necessarily very few persons who might be termed paupers outside the State institutions. It is open to question whether persons receiving constant relief of money and kind (either or both) from benevolent institutions should not be classed as paupers. Reliable data are not available to show the number of persons in receipt of such permanent relief in New South Wales. From the report of the Benevolent Society of New South Wales, Sydney, I give the following information:—

W. Ridley.  
24 June, 1896.

CLASSIFICATION of cases receiving relief on the 31st December, 1894.

- 200 widows, having the custody of 709 children.
  - 7 mothers, with 23 children whose fathers were insane.
  - 165 widows, whose old age and infirmities prevented their doing much work.
  - 3 blind men and 2 blind women.
  - 22 aged and destitute men, too infirm to maintain themselves without assistance, 3 having each a grown daughter, and 1 a grandchild.
  - 53 old and infirm married couples, 3 having 4 grandchildren.
  - 74 women with sick and afflicted husbands, there being 236 children.
  - 13 women, with 42 children whose fathers were in gaol.
  - 89 deserted wives, left to provide for 256 children.
  - 12 orphan children living with poor relatives.
  - 17 cases where husbands were temporarily out of work, and pressing in need of help for their wives and 39 children; 10 husbands were absent from home looking for work.
  - 3 women, with 9 children whose fathers were blind.
  - 14 destitute women, having 29 children depending upon them.
- Total:—664 cases, comprising 797 adults, 1,361 children—in all, 2,158 individuals.

3. Does that give a fair idea of the operations of that society? So far as I know.

4. *Dr. Graham.*] So far as the returns are furnished to your Department? Quite so. These are particulars with regard to the Government Institutions:—

The Government Institutions, exclusive of hospitals for the insane, gaols, the State Children's Relief Department, general hospitals (indoor and outdoor patients), and refuges, at the end of 1895 accommodated 3,358 persons (2,756 men and 602 women). The institutions supported by private charity, exclusive of the Benevolent Society of New South Wales, Sydney (the report of which is attached), house about 191 old people, distributed as follow:—Home for the Aged Poor (R.C.), Randwick,

W. Ridley. Randwick, 67; Sir Moses Montefiore Jewish Home, 10; Goulburn Benevolent Society, 3; Maitland Benevolent Society, 42; Newcastle Benevolent Society, 40; Grafton Benevolent Society, 2; and Windsor Benevolent Society, about 30. For purposes of comparison with returns of the other Colonies, the figures relating to Government Institutions alone have been used. The number of paupers in the Government Asylums of New South Wales is shown below:—

ADULTS in Government Asylums for Infirm and Destitute, and percentage to Population.

Year.	Number.	Per 1,000.	
		Adult Population.	Total Populat. o .
1890 .....	2,448	3.5	2.2
1891 .....	2,593	3.6	2.2
1892 .....	2,912	3.9	2.4
1893 .....	3,146	4.2	2.6
1894 .....	3,252	4.2	2.6
1895 .....	3,425	4.3	2.7
1896 (to 8th February) .....	3,540	4.5	2.8

I assume an adult pauper to be a person 15 years of age and over.

5. Those persons are supported as in-door patients practically;—there is no system of out-door relief as applied to these institutions, I presume? I think not; I have a return of the paupers in the Government Asylums of the Australasian Colonies, which gives these figures:—

Colony.	Total Adult Population (15 years and over).	Number of Paupers at end of year (latest available information).	Proportion of Paupers per 1,000 of adult population.	Expenditure.	
				Total (exclusive of cost of construction, &c.).	Per Inmate.
				£	£ s. d.
New South Wales .....	780,547	*3,356	4.30	51,017	14 7 3
Victoria .....	770,204	2,228	2.89	26,218	12 2 6
Queensland .....	356,936	837	2.34	11,270	13 9 4
South Australia .....	208,314	338	1.62	+15,912	.....
Western Australia .....	50,379	235	4.66	+10,700	.....
Tasmania .....	94,992	741	7.80	8,275	10 19 9
New Zealand .....	407,781	925	2.27	†	†

\* Includes cancer, consumption, and ophthalmic cases. † Including cost of out-door relief, which cannot be separated. ‡ Cannot be stated.

6. That gives the figures as regards the poor in Government Asylums;—have you any return showing the number of indigent people supported by other charitable agencies in these colonies—a return, for instance, similar to that you just read, showing the various benevolent societies in Sydney? I do not think we have that information with regard to the other colonies. The following table is from the Census Return of New South Wales:—

Sexes.	1861.			1871.			1881.			1891.		
	Total population	Bread-winners.	Persons of 65 years and upwards.	Total population	Bread-winners.	Persons of 65 years and upwards.	Total population	Bread-winners.	Persons of 65 years and upwards.	Total population	Bread-winners.	Persons of 65 years and upwards.
Males .....	198,488	132,408	3,471	275,551	171,320	7,284	411,149	262,691	11,566	608,003	382,385	16,649
Females .....	162,372	28,806	1,479	228,430	36,373	3,432	340,319	54,963	6,847	515,951	89,502	11,692
Total .....	350,860	161,214	4,950	503,981	207,693	10,716	751,468	317,654	18,413	1,123,954	471,887	28,341

Wage-earners, 1891.—The wage-earners (specified occupations) when the Census was taken in 1891 numbered:—

Males... .. 245,175 Females... .. 54,857 Total... .. 300,032

7. Whom do you include under the term "wage-earners;"—what exact meaning do you give to that term;—would it include the male population who are not paupers? All those returned in the Census Schedules as earning wages and salaries. The following information concerning breadwinners is taken from *Wealth and Progress*:—

## BREADWINNERS.

The breadwinners may be subdivided into divisions indicating their status as workers. Persons who were employed, but who neglected to state whether they were wage-earners or not, have been assumed to belong to the grade of wage-earners; and Civil Servants and other State employes have been included in the same category:—

Grade.	Males.	Females.	Total.
Employers .....	53,403	2,640	56,043
Persons working on their own account .....	49,482	14,123	63,605
Relatives assisting .....	8,943	7,526	16,469
Wage-earners .....	245,175	54,857	300,032
Persons not rightly classified either as employers or wage-earners .....	6,597	7,517	14,114
Unemployed .....	18,512	2,810	21,322
Not specified .....	273	29	302
Total breadwinners .....	382,385	89,502	471,887
Others .....	225,618	426,449	652,067
Total population, exclusive of Aborigines...	608,003	515,951	1,123,954

## ON OLD-AGE PENSIONS.

The employers comprise breadwinners who are assisted in their occupations by paid workers; the wage-earners whom they employ numbered 256,734, being the total stated above less 43,298 who were employed in domestic pursuits and not assisting the breadwinners. The proportion of wage-earners to every 100 employers was, therefore, 458, an average pointing to a very large number of small employers. Persons working on their own account are extremely numerous, and are especially strong amongst the farming classes and those following trading pursuits. W. Ridley. 24 June, 1896.

The persons not rightly assignable to any of the three classes just mentioned largely comprise those who derive incomes from sources which cannot be directly related to any occupation, and who are popularly styled as of independent means, the remainder being persons who vaguely described themselves as capitalists, householders, mine-owners, contractors, merchants, and the like.

The relatives returned as assisting do not form a very numerous class. They are mainly found engaged in agricultural pursuits, in which there were 7,617 males and 6,325 females; the fewness of the females is accounted for by the fact that domestic duties take up the whole of their time, and even if such were not the case the only branch of farming in which their services could be profitably utilised is dairying.

## DEPENDENTS.

The dependents may be grouped under four sub-divisions:—(a) persons employed in household duties without wages, and of these there were 210,799, viz., 210,701 females and only 98 males; (b) persons of tender years unable to earn their own livelihood, numbering 235,590, of whom 118,454 were males and 117,136 females; (c) relatives and others not performing household duties, who numbered 96,140 males and 94,123 females, in all 190,263; and (d) persons dependent on charity, or under legal detention; of this class there were 12,551 persons, viz., 8,593 males and 3,958 females.

The persons performing household duties without wages are chiefly wives and daughters of breadwinners; the number who could not be so described was 21,909. The relatives and others not performing household duties were for the most part aged persons, the parents or grandparents of the breadwinners. There were, however, some young persons returned under this category; these comprised daughters or wives, who could not be classed as performing domestic duties, or who desired not to be so described. The larger portion of the persons dependent on charity were living in public institutions, and, classed according to age, were as follow:—

Age Groups.	Males.	Females	Total
Under 5 years .....	187	151	338
5 years and under 15 .....	929	949	1,778
15 " " 20 .....	257	307	564
20 " " 25 .....	523	279	802
25 " " 45 .....	2,850	1,073	3,923
45 " " 65 .....	2,133	826	2,959
65 and upwards .....	1,701	460	2,161
Age not stated .....	13	13	26
Total .....	8,593	3,958	12,551

The indigent people of 65 years and upwards numbered 2,161; the total number of persons in the Colony of these ages was 28,365, so that it may be said that out of every 100 persons who reach 65 years, 8 will enter the asylums for the destitute.

I hand in, for the information of the Committee, detailed information concerning the foregoing, taken from the Census for 1891 [Appendix A]. Apart from the information given from my office, I have prepared a list of books which, I think, would throw considerable light on the subject in hand. The books are as follows:—The State and Pensions in Old Age (Spender); *Contemporary Review*, Jan.-June, 1891, vol. 59; Pensions and Pauperism (Wilkinson); Problem of the Aged Poor (Drage); Aspects of the Social Problem (Bosanquet); Some Poor Relief Questions (Lubbock); *Fortnightly Review*, 1891, vol. 50; Royal Commission on Labour (Blue Book); Foreign Reports—Denmark, Sweden and Norway, Spain and Portugal, Austria-Hungary, and Balkan States. I would also specially recommend that the Committee obtain a copy of the paper read before the Institute of Actuaries, on the 27th April, 1891, by Mr. T. E. Young, B.A., which deals with the German scheme, both from economic and actuarial standpoints, and which is reported to be by far the best treatise of its kind published; also, the Fourth Special Report of the Commissioners of Labour on Compulsory Insurance, 1893, which was prepared at the request of the United States Government.

8. I am not quite sure whether, among the figures quoted, you gave the percentage of people over 65 years of age to the total population of the Colony? No, I have not given that, but it can easily be worked out from the figures quoted.

9. *Mr. Chapman.*] What was the proportion of paupers per 1,000 of adult population in New South Wales? The proportion was 4.30.

Mr. George Henry Pitt called in, sworn, and examined:—

10. *Chairman.*] What position do you occupy? Chief Compiler in the Statistician's office.

11. I understand you desire to give some information bearing on the subject before the Committee? In the figures he gave Mr. Ridley omitted to state the percentage of paupers in the United Kingdom. In England and Wales the proportion of paupers was 7.13 per 1,000; in Scotland, 6.51; in Ireland, 9.60; and in the United Kingdom, 7.37. In this Colony the percentage is 4.8 per 1,000. I would point out to the Committee that *Hazell's Annual* gives particulars of the old-age pension schemes in a very concise form. There are twelve English schemes, including the Friendly Societies' scheme. Then there is the German scheme, which is now working; the Danish scheme, which is working; and then there are the schemes of France and Italy. Through the courtesy of Mr. Anderson, the Librarian, we have unearthed two more—those of Denmark and Sweden and Norway. Austria-Hungary and the Balkan States are also investigating the question. If the Committee desire it, I will mark extracts in *Hazell's Annual* and other books on the subject, which I think will afford them useful information. G. H. Pitt. 24 June, 1896.

12. *Dr. Graham.*] Do you think that the forms provided in this Colony with regard to poor returns are satisfactory? No. An immense amount of zeal is necessary on the part of anyone endeavouring to compile that portion of the statistics relating to our charities. The information, such as it is, I respectfully suggest, should be laid before the Committee. First of all I would point out that the sectarian bodies always have a suspicion that we are prying into their affairs with an ulterior motive, and they will only give us a few details. One prominent body generally works these things; the number of the institutions which other bodies control being very small indeed. Then, again, they will not understand the forms, no matter how plainly they are drafted. For instance, they will return 3,000 or 4,000 meals, and not

G. H. Pitt. not the distinct person to whom the relief was given. For this reason we cannot give accurate data as to the poverty existing outside the Government institutions and the extent of outdoor relief granted from private sources.

24 June, 1896.

13. So that such outdoor relief might or might not exist, so far as your returns go? I am quite certain it exists.

14. But you have no data to go upon? Well, I am exercised as to what constitutes a pauper. One of the authorities on this subject takes the same position on that point that I do. He says it is difficult to define what really is a pauper. We do not consider the insane as paupers; nor do we consider children as paupers, because the State stands in the position of a parent until they arrive at the age of maturity, and then it has nothing further to do with them. Then again outdoor hospital patients are not paupers. There is not the slightest doubt, however, that a tremendous number of those receiving doles from the Benevolent Asylum in Sydney should be classed as paupers. I have nothing to guide me in defining who are paupers. Possibly we could pretty well double the number returned as paupers. Some hard-and-fast definition should be laid down to determine what is a pauper.

15. Do you think that if you had some more complete form of obtaining returns it would help you very much? If we only had the law behind our backs the whole of the returns could be splendidly collected. I take the opportunity of mentioning that with regard to mills, manufactures, agriculture, and other industries, if we only had the law behind our backs our office would be ten times more useful than it is. The machinery is there, and it only wants to be put into operation.

THURSDAY, 25 JUNE, 1896.

Present:—

MR. CHAPMAN,		MR. O'REILLY,
DR. GRAHAM,		MR. SCHEY,
MR. McLEAN,		MR. WILKS,
	MR. MCGOWEN.	

E. W. O'SULLIVAN, Esq., IN THE CHAIR.

Mr. Sydney Maxted called in, sworn, and examined:—

S. Maxted.

25 June, 1896.

16. *Chairman.*] What position do you occupy? Director of Charitable Institutions.

17. You understand that this Committee is sitting to inquire into the question of State insurance, old-age and invalidity pensions, and the general system of pauper relief in the colonies? Yes.

18. *Dr. Graham.*] What designation had you before you had the designation of Director of Charities;—you had the same control, but under another name? I have had the same control that I have now for the last eight years.

19. Under what name? Under the name of Director of Government Asylums. There are several designations—Director of Government Asylums, Boarding-out Officer under the State Children's Relief Act, Chief Officer under the Children's Protection Act, and General Supervisor of subsidised institutions, when required under the Act.

20. So that you were familiar with the conditions of the poor before you became Director of Charities? Yes, for the last twenty years, I suppose, in one form and another. Before proceeding with my evidence I should like to explain an apparent difference in the percentage of State paupers in the Asylums for the Infirm and Destitute in New South Wales as compared with the other colonies. This was referred to yesterday by the Acting Statistician. The reason of this difference is that here we have a very much larger number of hospital patients. We include the consumptive, cancer, and ophthalmic patients, who, in the other colonies, are provided for in separate institutions apart from the Government Asylums for the Infirm and Destitute. We rank them here as ordinary paupers. The members of the Committee, and particularly Dr. Graham, will understand what I mean by reference to the death-table for the year 1895. You will see there the number who died from active diseases as compared with the number who died naturally from old age.

21. Does not that class of indigent poor also rank as an ordinary pauper in England? In connection with English workhouses, such cases as those of paralysis and rheumatism and others, which you would call chronic cases, would be so treated, but not so in regard to cancer cases and consumptive cases.

22. The former being diseases of old age? Yes. Last year there were 731 deaths at the Government Asylums for the Infirm and Destitute, and of that number 239 occurred from senile debility. I may say that at that time the total number of inmates was 3,200, men and women. The number has now reached nearly 3,600. There were 52 deaths from cancer, 102 from phthisis, 12 from asthma, 38 from bronchitis, 13 from pneumonia, 26 from influenza, and 17 from diarrhoea. The other diseases do not go beyond single figures. They include peritonitis, gastritis, dyspepsia, Bright's disease, diseases of the bladder, injury to hip, tumour, and malignant growth. No cases of that character are dealt with in the asylums of the other colonies.

23. The diseases you read out just now, such as bronchitis, influenza, diarrhoea, and pneumonia, are those which occur among old people, therefore the fact to which you allude should not account for the enormous increase of pauper patients in the asylums here over the number in other colonies? I am simply pointing out that in the other colonies they do not deal with that class of patients in the asylums similar to those under my control. They have separate hospitals for them.

24. But they have no hospital in Victoria for people with chronic diseases? They have for the consumptive, cancer, and ophthalmic cases, according to the information I obtained in connection with a recent inquiry, and I will give the figures directly. In regard to the other colonies, the following returns have been supplied for 1894-5. In the Victorian Asylums there is one inmate to every 546 of the population. The cost of the ordinary yard inmates was £13 3s. 9d. per head per annum. That would be exclusive of hospital inmates. The casuals—those are the people who go in and out of the asylum, and who just get food and occasionally lodge for a few days, and who are not supplied with clothing—cost per head £9 3s. 7d. This is not inclusive of cancer, consumptive, and ophthalmic patients. Our returns do include patients of that class. The cancer patients in Victoria cost £37 5s. 5d. In South Australia the proportion of paupers returned is 1 to every 1,095 of the population. This only relates to the asylums, and in that colony, I understand, they depend mostly on the outdoor relief.

25. The proportion, then, in South Australia is double that in Victoria? Yes; but they keep more people outside there than is the case in Victoria, and outside patients are not classified as paupers, because the relief is only partial. In South Australia the general average cost is £13 4s. 4d., as regards the asylums. The cancer, ophthalmic, and consumptive patients in that colony are not dealt with in the ordinary benevolent asylums, and they cost £53 5s. 7d. per head. In Queensland the proportion of classified paupers to the population is 1 to every 540, and the ordinary benevolent asylum cost is £13. It will be seen that there is scarcely any difference in the ordinary asylum cost in the three colonies, the highest being £13 19s. 9d., and the lowest £13 per head per annum. In Queensland, as elsewhere, the consumptive, ophthalmic, and cancer paupers are dealt with in separate institutions, and their annual average capitation cost is given as £71 2s. That is about equal to ordinary hospital cost here. Now we come to our colony, where the proportion to population, so far as the Government asylums are concerned, is 1 to every 431, and the general average cost is £14 7s. 3d., or an average of nearly £1 a year higher than the cost in the other three colonies. But these include something like 1,700 hospital patients out of a total number of inmates of 3,600, and of these hospital patients there will be fully 300 phthisical cases, 100 cancer cases, and 300 ophthalmic cases. I had an analysis made three months ago as far as possible of the two broad divisions of hospital and general inmates, technically known as yard inmates, so as to enable me to make a comparison with the other colonies, with the result that our general inmates cost £11 18s. 8d. per head, and the all-round hospital cases £19 1s. 11d. You will understand that I could not separate the medical comforts of the cancer and consumptive patients from those of the other ordinary inmates of the hospital.

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26. Suppose a man of, say, 25, 30, or 35 years of age presents himself at the Government dépôt in Sydney, and is told that he has got some serious disease;—being destitute, he is not sent to the hospital, but is sent to one of your asylums? He would be sent immediately to Dr. Paton, who decides at once whether it is a case for the general hospital, or a case for one of my asylums. If he gives an order that the patient is a proper person for admission into one of my institutions, it is never questioned. But there is a safeguard at the institution. There is a check medical examination there, and if the Medical Superintendent finds that the case is one which should be treated in a general hospital, an order is obtained from the Medical Adviser to the Government, and the patient is immediately sent to one of the hospitals—the Prince Alfred Hospital, the Sydney Hospital, or perhaps the Coast Hospital.

27. What I want to emphasise is this: A patient goes to Dr. Paton, who is the Government officer for receiving the sick and sending them to your institutions, and if he finds that the patient is chronically ill, and is destitute, he sends him on to you? Yes.

28. In other countries such patients would go to some hospital? In Queensland some cases would go. For instance, suppose it was a consumptive or cancer case, in the other colonies it would go into another kind of institution altogether.

29. So that is how it comes about that our numbers are so high? To a great extent that is so; but whether the difference is altogether accounted for by that fact I cannot say, because I cannot get accurate returns from the other colonies.

30. *Mr. O'Reilly.*] Surely it is a fact that 95 per cent. of the patients in the asylums under your charge are over 60 years of age? The proportion is not as great as 95 per cent. We have 3,600 inmates, and about 2,300 of those are over 60 years of age. That would be about 63 per cent. roughly estimated.

31. *Dr. Graham.*] In proportion to the number in the asylums? Yes.

32. But could you give us the percentage of the population of the Colony over 60 years of age? I could not do so without working out the figures, but it could be very easily arrived at. The average age of the whole of the people in my asylums would be about 63 years. The younger inmates are generally those suffering from consumption. We have trained nursing staffs at the institutions, and, except in one case, daily medical attendance, and in all cases resident dispensers. So that it will be seen that our returns from the point of view of economy are very satisfactory, and if we could get the number of hospital patients in the other colonies separately, the percentage to population would possibly be equally satisfactory.

33. *Chairman.*] You have given a considerable amount of attention to the question of State insurance and old-age and invalidity pensions, and from your position, as Director of Charities, you are no doubt conversant with the various forms of relief in the country. Would you kindly give the Committee the benefit of your opinions on these various matters? Perhaps it would be as well if I first gave the Committee the leading features of some of the principal schemes for old-age pensions formulated in England during the past few years. With regard to Mr. Chamberlain's schemes, the first was based on voluntary contributions from the individual to be State-aided, the pension to be drawn at 65 years of age. Under this the depositor would give £2 10s. at the age of 25, and pay an annual subscription of 10s. afterwards. That would continue right up to the age of 65. The State adds £10 to the sum of £2 10s. deposited, and pays interest at 2½ per cent. on the whole amount. It is estimated that this would give a pension of 5s. a week at 65 years of age. That was a voluntary contribution scheme. Mr. Chamberlain's second scheme was for the depositor to give £5 at the age of 25 and pay £1 a year afterwards. To this the State is to add £15. If the depositor died before the third payment was made the deposits were to be returned to his widow. If he died after the third payment and before he was 65, the widow and children were to receive 12s. a week each until the children were 12 years of age. Mr. Chamberlain's third proposal was for co-operation with Friendly Societies and Trades Unions. Any person depositing 30s. if a male, or 25s. if a female, at the age of 25, and insuring in any society for £6 10s. or £3 18s. respectively, would have the pensions arising from these contributions doubled by State payments at 65 years of age. Mr. Chamberlain attached the most importance to this scheme, because he thought he would get the co-operation of the Friendly Societies in connection with it.

34. Would you give us your opinion as to the possibility of applying any of these schemes to New South Wales? I do not think you would get the people here to keep up the payments under any voluntary system. The three schemes I have described are all under the voluntary system. The contributions are subsidised by the State, but it is left entirely optional with the person whether or not he becomes a contributor to the fund.

35. Have you any other objection? I do not see any other objection than that.

36. *Mr. O'Reilly.*] Which you regard as a fatal objection? I think so, as far as I am able to judge of the habits of the people who would require to be benefited by these proposals, and I know as much about them as any man, for I have been among them all my life.

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37. *Chairman.*] We will now take the next scheme? The next is Canon Blackley's scheme. It is a compulsory system of contributions. To secure an old-age pension of 4s. a week at 65 a person would have to pay £5 between the ages of 18 and 21, and the State gives subsidies to an equal amount. Canon Blackley calculated that if that money were invested it would return at 65 years of age a pension of 4s. a week. It is stated in the reports that Canon Blackley addressed 400 meetings with reference to that scheme, and he says that with one exception they were unanimously in favour of it.
38. Can you see any objection to it? The only objection I can see to it is whether it might not be considered that you were interfering with the liberty of the subject. It is something on the lines of the German scheme.
39. *Dr. Graham.*] The German scheme is compulsory upon the masters too? Yes, and the insurance companies as well. The pension would really be contributed from four sources in Germany—the employee, the employer, the insurance companies, and State subsidies.
40. *Mr. O'Reilly.*] But would this compulsory contribution of £5 be forthcoming from a large section of the community between the ages of 18 and 21? Nothing is said about that. It is, of course, a point to be considered whether it would be possible to get the contribution from these people. I do not think you would, and you would, consequently, exclude from the operation of the scheme the very persons who most require to be relieved.
41. In the great majority of cases the pauper and destitute at 60 is the penniless ragamuffin at 18? There is no doubt about that.
42. *Dr. Graham.*] Are you aware that no actuary of any standing would back up Canon Blackley in his calculations—that he did give some actuarial authority, but that authority is not acknowledged by the Actuarial Society? That objection was raised, I know. There is another objection, and that is that a pension of 4s. a week would not be of any use to a person 65 years of age. In order to get double that pension you would have to double the payments between the ages of 18 and 21, and that would increase the difficulty of obtaining the money. That does not seem to me to be a practicable scheme. Now I come to Charles Booth's scheme. That is a scheme for free and universal pensions. He would give pensions of 5s. a week at 65 years of age to everybody of that age in the United Kingdom, whether he was poor or rich. Mr. Chamberlain objected to this on the ground, as he put it, that it was outside the range of practical politics, because in order to carry it out in England and Wales it would cost something like £24,000,000 a year, and in Ireland and Scotland an additional £17,000,000. I suppose the same objection would be raised to the scheme here if it were attempted to go upon the same lines. The fourth scheme is Mr. Price Hardy's, which is a modification of Mr. Booth's scheme. Mr. Hardy suggested that every deserving and impecunious person—that is to say, all who are not able to support themselves—should receive 10s. a week at the age of 65, except in the case of married couples, when the pensions would be on a correspondingly reduced scale—he means that if two are living together he would not give them £1. This was to be purely a State pension, but its probable cost to the nation was not stated.
43. *Dr. Graham.*] It is a theoretical scheme really? Yes.
44. *Chairman.*] In using the words "State pension" there you mean, I presume, that there were to be no subscriptions whatever? No; it was to be paid wholly by the State.
45. How would such a scheme fit into our circumstances? It appears to me that it is about the only one that has been formulated that could be at all applied to the circumstances of this country.
46. *Dr. Graham.*] It could be applied, because its administration would be easier than in the case of the other schemes, where the administration would be very difficult, because you would want all kinds of agencies to collect the money and keep the books? Not only that, but this seems to be the only safe way of getting the funds. You would have to set apart, I suppose, special sources of revenue for it—take it perhaps from the probate duties and set apart some of the waste lands, or earmark some other sources of revenue, or otherwise you would require a special poor rate to meet the pensions.
47. That is the Danish principle? Yes, except that this scheme does not exclude what the Danish system proposes to exclude. There they exclude almost everybody, for it is proposed to give the pensions at 60 years of age "to any person who has not undergone a sentence, whose poverty has not been caused by his own fault, or by extravagance, or by making undue provision for his children or others, who has resided in the country for ten years, and has not during that period been found guilty of begging or receiving poor relief or been convicted of vagrancy." If you excluded all those classes you would have hardly anybody left. I do not think there are any other schemes worth considering except the four I have described. They are the principal schemes that have been considered in England.
48. *Mr. O'Reilly.*] You regard Mr. Price Hardy's proposal that 10s. a week should be given at the age of 65 to impecunious persons as the least impracticable? As the only practicable scheme, because it seems to me that that is the only scheme under which you could raise the necessary revenue. You would not get the voluntary contributions, and if you attempted the compulsory contribution system you would have to first arrive at the certainty of all these people between the ages of 18 and 20 being able to give the money required to build up the pensions.
49. Do you think Mr. Hardy's scheme would apply to us in the present condition of affairs? The objection to it is this—you might perhaps make it apply out of the 3,600 inmates in the Government asylums to 500 or 600, certainly not more. But then you open the door to this abuse—how are you going to prevent every person of 60 years of age, or whatever age you might fix, from coming and asking for this relief.
50. You would quadruple your number of paupers very quickly, I think? That is the objection that has been thrown at the heads of all these English people who have been trying to bring these schemes into existence, and I have noticed this peculiarity, that almost everybody directly concerned with the administration of charity in England is opposed to all these proposals for pensions of any kind.
51. *Mr. McLean.*] You say the scheme might be applied to 500 or 600 inmates in the Government asylums;—what reasons have you for believing that it could not be applied to all the inmates in the asylums? I will give you the figures: First, there are about 1,700 hospital patients. Hospital patients in the institutions could only be properly attended to in the hospital divisions, where they would get the proper nursing and medical attendance. Then there are some hundreds of mentally weak people in the asylums. You must keep them under some sort of liberal restraint—I do not mean to say within four walls, but you must keep them within enclosed ground, so that they cannot wander away and fall into the river, or anything of that sort. There are also hundreds of the class known as "casuals," who, if they received a pension to-day, would spend it in drink at once and return to the asylums to-morrow. None of these classes could be pensioned.

52. In other words, you think they are better cared for in the asylums and better provided for than they would be if they were the recipients of a pension? Yes. S. Maxted.  
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53. *Dr. Graham.*] They are protected, and being people who want systematic daily care they receive nursing which they could not get if living on a pension in their own homes? That is so.

54. *Mr. O'Reilly.*] Their death-rate is 25 per cent. per annum, or in other words 731 inmates die every year, and that will give a general idea of their weakness? Yes.

55. *Mr. Wilks.*] You stated that the authorities connected with the charitable institutions in England were opposed to any old-age pension scheme;—whom do you mean by the "authorities"—the secretaries of the charitable bodies? I mean all the officials concerned in the administration of indoor and outdoor relief, and all the Boards of Guardians. Then there was that large Parliamentary Committee on Mr. Chamberlain's voluntary scheme, which I think was composed of eighty members. The gist of their report was that they did not see their way clear to make any definite recommendation at present. They sat a very long time, and took an enormous quantity of evidence, bearing upon all phases of this question.

56. Why did the Boards of Guardians and charitable institutions oppose that particular scheme? They opposed all the schemes on the one ground—that any system of pensions would enormously increase the number of paupers.

57. That it would be cultivating pauperism? Yes; that is the objection raised in every instance. There is a scheme in operation in Germany founded on the compulsory insurance system. The Act under which pensions were given there came into full force in 1891. It was passed before that date, but it did not come into actual operation until 1891. It provides for old-age pensions and invalidity pensions, and makes provision against old age and infirmity compulsory upon all employees whose yearly income does not exceed £100. For an invalidity pension at any age five years' subscription to the fund is necessary, and for an old-age pension subscription for thirty years. But these latter classes are not granted until the applicant has completed his seventieth year. These pensions are contributed from four sources in certain specified proportions, namely—the insured person, his employer, the State, and the District Insurance Office. In 1892 the pensions granted amounted to 22,000,000 marks—I understand the value of a mark is about a shilling,—and in that year nearly 11,250,000 persons were insured. Within two and a half years after the Act came into force, there were 193,114 old-age pensions and 34,746 invalid pensions granted. Everybody appeared to be dissatisfied with the system, because of the insufficiency of the pension and the advanced age at which it was granted. Mr. Goschen, in criticising that pension scheme, expressed his opinion with reference to its application to a British community:—

I want to point out one of the cardinal dangers in connection with the system of compulsory insurance in its bearings on Socialistic projects. It means regulation, and regulation of labour as a whole. You cannot have a system of compulsory State-aided insurance without depriving working-men of liberty and of many privileges which they enjoy.

Those words were used by Mr. Goschen in a speech on the German system delivered about six years ago. He goes on to say:

To a German workman the threat can have but few terrors, or what terrors it has have mostly been exhausted. The regulation of labour as a whole has long been the policy of the German Empire."

58. *Chairman.*] Do you endorse that system? I think the verdict with regard to it is obvious. I do not think it needs a second's consideration. It certainly would not be tolerated in this country.

59. As a matter of fact, from your researches into this question you are possessed of the information that a number of the German people themselves are dissatisfied with the scheme? Yes.

60. Will you state the reasons of the dissatisfaction? There is a very general opinion in Germany that the pension is too small, and the age at which it can be applied too far advanced for the scheme to be really a remedial measure for the poverty of old age.

61. *Mr. O'Reilly.*] Whose statement is that? That is taken from Drage, who has given as much attention to the subject as anybody,

62. *Dr. Graham.*] And Spender gives reasons against it? Yes; he points out that you compel a man to invest, and you do not give him any substantial return for his investment, and you leave the relief until it is of no use to him.

63. And he often forfeits what he invests? Yes.

64. *Chairman.*] Have not the social democrats of Germany taken a strong stand against the system of State insurance? A very strong stand.

65. One of the reasons was that it appeared to relieve the rich of the proper amount of payment for the relief of the poor? Yes.

66. And another, that it led to a reduction of wages and increased taxation? Yes.

67. And on the whole there seems to be a strong feeling throughout Germany against the system? Yes; a very strong general feeling amongst the people whom it is presumably intended to benefit. The next system that was considered, both by the Charity Commissioners and Mr. Chamberlain's Voluntary Parliamentary Committee, was the Danish system. The Act granting old-age pensions in Denmark was passed in 1891. It ignored the principle of self-help altogether. One-half of the pension was to be borne by the communes and the other half by the State. The pension was to be granted at the age of 60 years. No amount was mentioned, it being simply stated that the pension must be sufficient for the support of the person relieved and his family, and could be given either in money or in kind. No particulars have been furnished up to the present to show how far the system is operating. The next scheme is the French scheme, which is very fully described by Spender, page 101. This was submitted to the Chamber of Deputies, but did not reach legislative maturity, although it was thought that it may form the basis of future legislation. Under this scheme, every person at the age of 25 years, and earning less than 3,000 francs, or £120, a year, would pay a contribution of 10 or 5 centimes a day from his 25th year, seventy-five days in each year being reckoned as holidays or festivals, upon which no payment would be required. For the 10-centime contribution he would secure a first-class pension, and for the 5-centime a second-class pension. Whichever sum the man elects to pay the employer is bound to double it, and the State to add two-thirds of the combined contributions—thus ensuring an annuity of either £24 or £12 a year.

68. Do you wish to express any opinion as to the possibility of adapting a proposal of that kind to our circumstances? There again comes the question of the man making provision for himself—that is the difficulty in the way. It does not seem to me that you will be able to make any system under which the individual is to contribute generally practicable; and that, of course, means that any person who did not contribute would, if impecunious, in his old age just drift into an asylum, as at present. 69.

S. Maxted. 69. *Mr. O'Reilly.*] The schemes you have mentioned are the only ones you think worth bringing before the Committee? Yes, I think so. With reference to these, I can give you the opinion of Mr. Chamberlain's Committee and of the Charity Commissioners. Mr. Chamberlain's Committee did not see its way to make any definite recommendation at present.

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70. *Mr. McGowen.*] In the schemes referred to, was any exception made in regard to men who had insured their lives? Having made sufficient provision for themselves they would be excluded.

71. Would they be excluded under the Danish system? I could not say without looking up the authority. The report of the Charity Commissioners, with reference to the subject generally, says:—

Having fully considered the various schemes of old-age pensions, as well as the question of dealing with the aged poor in asylums, we have come to the following conclusion:—These two forms of relief, namely, almshouses and pensions, are well fitted to meet the needs of the poor in old age, and it is unnecessary here to enter further into the question of their comparative advantage than to say, that while, on the one hand, an almshouse in which proper supervision and attendance are available, seems to be the best fitted for the relief of those who have no relatives capable of rendering them assistance, or who are wholly disabled; and relief, by means of pensions, on the other hand, gives more scope for the care of the aged poor by their families, and for enforcing those obligations to contribute to the support of relatives, the fulfilment of which is an obvious condition of all relief.

There is one feature to which I wish to direct your attention particularly. All the witnesses who opposed pension schemes used the out-door relief system in England as an illustration that they would be likely to increase pauperism, and they pointed out that in the Unions where the system does not exist the percentage of pauperism is low. But they do not show, in any case, what becomes of the poor people who ought to be relieved, who do not, according to the statistics, go into the workhouse, and whose poverty appears to be simply ignored. This appears to me a very easy method of securing a low percentage of pauperism; but the humanity of it is another question.

72. *Mr. Schey.*] In the Old Country there are a very large number of agencies connected with different churches and charitable institutions which look after aged people. Are there no means of getting returns of the relief granted to old age from those societies, many of whom are registered and well known? I have no means of getting that information.

WEDNESDAY, 1 JULY, 1896.

Present:—

MR. CHAPMAN,		MR. MCGOWEN,
DR. GRAHAM,		MR. NEILD,
	MR. SCHEY.	

E. W. O'SULLIVAN, ESQ., IN THE CHAIR.

Mr. Sydney Maxted further examined:—

S. Maxted. 73. *Chairman.*] Have you anything to add to the evidence given on the previous sitting-day? During my previous examination I was asked to state my opinion of the various pension schemes formulated in England, and I gave them in detail—so far as I thought they were of sufficient importance to submit to this Committee. I should now like to say briefly and clearly, in order that I may not be misunderstood in this matter, that I do not approve of the voluntary principle advocated by Mr. Chamberlain, because, although the theory is all right, I feel quite sure the payments would never be kept up by the particular class who would probably require to be pensioned in old age. Canon Blackley's compulsory proposals are objectionable, because they would not be tolerated in the first place; and it would also be next to impossible to obtain the necessary deposits of, say, £12 10s. between the ages of 18 and 21 years of age to entitle the individual to a pension of 10s. a week; and I do not think any smaller sum would be sufficient in this Colony to provide the pensioner with common necessaries. Besides, I am sure from the authorities I have looked up that Canon Blackley's figures are unreliable, apart from the objectionable features of his proposal. Mr. Charles Booth's scheme of free and universal old-age pensions, to be paid by the State to every person in the United Kingdom at 65 years of age, has been declared by several authorities to be the most logical and equitable, and to be impracticable only on the ground of its cost, which, according to the figures I have quoted, has been shown to be enormous. It may, perhaps, interest the Committee to know what the result would be in this Colony if it was determined to apply this scheme to all persons over 60 years; and I really think this age should be the standard fixed, in view of the difficulty of men above it obtaining employment, particularly at the mechanical trades. I shall say a few words on this phase of the matter, however, later on, when considering the question whether old-age pensions are likely to affect the wage-earners. With regard to the other point, there were at the end of this year 55,400 persons in this Colony of 60 years of age and upwards; and if these were pensioned under Mr. Booth's scheme at 10s. per week it would cost £1,440,400 per annum; and if you extended the age to 65 years it would cost, at the same rate, £839,202 per year, as there were in December (31), 1895, 32,277 persons of that age and upwards in the Colony. Turning to the last of the four main proposals which I placed before the Committee, I come to Mr. Price Hardy's, which I expressed the opinion was the only practicable scheme for this Colony if it is ever determined to carry out a system of old-age pensions. You will remember that it proposed to give a State pension to every deserving poor person, and if you fixed the pension age at 60 years it would probably cost the Colony at this time £36,634 a year to apply it to persons of that class who are now receiving indoor and outdoor relief throughout the Colony from the various charitable organisations. I believe I have succeeded in obtaining figures (which are approximately accurate) from almost every charitable organisation in this Colony since last meeting. I will give a brief statement of these, in detail, later. But with regard to the apparently-deserving persons over 60, first, there are about 500 inmates of the Asylums for Infirm and Destitute who could be thus classed, then the sectarian institutions relieve, in round figures, about 200 more. Thirty-eight aged persons are receiving relief from the Government Pauper Vote; there are about 325 aged persons receiving relief (outdoor) from the Sydney Benevolent Asylum, and the aged recipients of indoor and outdoor relief from other societies are as follow:—St. Mary's Benevolent Society, 4; North Sydney, 20; Bathurst, 39; Forbes, 10; Newcastle, 48; Tamworth, 20; Singleton, 11; Armidale, 10; Young, 4; Penrith, 19; Narrandera, 3; Queanbeyan, 6; Milton, 2; Cootamundra, 6; Mudgee, 14; Hawkesbury, 20;

20; Maitland, 50. There are a few returns to come in, but I do not think that they will increase the number over 60 years of age in receipt of relief by more than fifty or sixty persons. S. Maxted.

74. I presume the evidence you have just given with regard to the charitable organisations in the Colony is up to date? Yes, up to last week. 1 July, 1896.

75. And you have obtained the information from authentic sources? From the institutions themselves. There are thus about 1,409 deserving poor persons over 60 years of age now known to be in receipt of indoor and outdoor relief throughout the Colony. I do not mean to affirm that these are all the deserving poor of 60 years of age and upwards who merit relief from charity, but they are all who have asked for it, and the cost of pensioning them would be as stated. There would, of course, be the danger I have already pointed out of the numbers increasing very largely if once a pension system became a recognised policy. It will be seen from these figures that there are comparatively few aged dependents outside the metropolitan area and the Government Asylums for Infirm and Destitute. As a rule, when the country district authorities—even including the hospitals—take hold of a pauper, they pass him on as soon as possible to the central institutions; and I have had to report some cases in which my medical officers have reported that this has been so improperly done from the hospitals that the patients have died from exhaustion immediately after admission. Indeed, when I took over the asylums eight or nine years ago I found the system was being so abused by the country hospitals and local bodies which were in receipt of Government subsidy that I declined to receive patients from the country districts, and particularly the hospitals, unless the following conditions were complied with in every case:—1. That applicant was both infirm and destitute, and had not any relatives in a position to support him outside a public institution. 2. That applicant was physically and mentally fit to travel. 3. That the case was not one which should be treated in a local hospital, or by a local benevolent society, subsidised for that purpose. 4. That in every case when practicable a medical certificate must be obtained as to the applicant's eligibility for admission into, or treatment in, one of the Asylums for the Infirm and Destitute.

76. *Mr. McGowen.* Have you imposed those conditions? Yes, since the issue of the circular. Previously patients were sent in, and were received without any inquiries being made. That circular was sent in January, 1889, to all the country hospitals. That was five months after these places were handed over to me. The first four months' operations of this circular brought the admissions down nearly 40 per cent. That is to say, instead of having 769 admissions from January 1st to December 31st, 1889, the admissions in the following year in which the circular came into operation went down to 627, a total decrease of 142, or nearly 19 per cent. Ever since that circular has been in operation, and that condition has been observed, this proportion of decrease has been maintained, notwithstanding the large increase of the numbers in the asylums. For instance, in 1889 the number was 769. From my report of last year, page 13, it appears that in 1889—that is the year in which this condition was not carried out—the admissions were 769; in the following year they went down to 627; in 1891 they went down to 618; in 1892 to 526; in 1893 to 485; and in 1894 to 465. There is one matter which I should like to explain at this stage in connection with my evidence on Thursday last. Mr. O'Reilly, looking at the death-table for last year, and applying it to the average daily number under treatment, asked me whether the death-rate had not been 25 per cent. Upon looking at the figures in the same way that Mr. O'Reilly did, I answered "yes," forgetting for the moment that the mortality during the year should not be estimated upon the average daily numbers, but properly upon the basis of the numbers who had actually been under treatment. The death-rate worked out in that way was 10·81 per cent. This is the plan adopted at the Sydney Hospital, where last year the percentage of mortality on admissions was 9·3. Of course the cases which are sent into the hospitals of the Government Asylums are supposed to be incurable cases, while the majority of those admitted into the metropolitan hospitals are for temporary treatment. There is a feature in connection with this death-rate to which I should like to draw the Committee's attention. I think it should be mentioned as showing the result of the improved method of dealing with inmates of the Government Asylums since the year 1888, because I assume the Committee desires to obtain the fullest information with regard to their treatment in the institutions in dealing with the question whether or not they could be better provided for outside. Up to the year 1887 the sole dietary of the inmates, apart from the hospital divisions, consisted, without variety, of dry bread and tea without milk, for the morning and evening meals; and soup, with the soup-meat, and vegetables in the middle of the day, except on Christmas Day and Queen's Birthday; and there was a custom of serving out the full allowance of 1lb. of bread for the whole day in the morning, which each man kept in a little bag, so that when the evening meal arrived numbers of men had really nothing left to eat. There were in that year about 2,100 inmates, and the grog-bill was something over £3,000 a year; and the death-rate properly computed had, for some years, under this method of treatment, been about 20 per cent. Dr. Manning was examined before a Royal Commission in 1887 in regard to this matter, and he gave the following emphatic opinion:—"He had had a considerable number of cases which having been cured by treatment in one or other hospitals for insane he discharged to the benevolent asylums, and which came back to him in a very short time. The impression he had formed with regard to these cases was that they had not been sufficiently fed, and that if they had been sufficiently fed they would not have been returned";—or, in plain English, that partial starvation had really driven a number of the feeble old inmates insane. Dr. Maher and Dr. Morgan gave equally strong testimony before that Commission. Upon taking over these Asylums in 1888, my first duty was to abolish, as far as possible, the free use of stimulants except where prescribed medically to hospital patients, and with the saving of cost thus effected to substitute a varied diet of heat-giving food. I submit a copy of the dietary table then adopted [*Appendix B*]. The result was very remarkable. The stimulant cost has been reduced since by nearly 75 per cent., and although the numbers in the hospital and general divisions have since increased year after year, and the average age of the inmates has slightly increased also, the death-rate in the first year of the changed system came down to 10 per cent., and this rate has only slightly varied since, but has never been higher. At my former examination Dr. Graham asked me if I could state the proportion of inmates of 60 years of age and upwards in the Government Asylums to those of similar age throughout the Colony. I could not answer that question off-hand, but I have since procured the figures. There were at the end of last year 33,088 males and 22,312 females of 60 years of age and upwards in the Colony, including 1,904 men and 378 women in the Government Asylums for the Infirm and Destitute. The proportion in the asylums to those out was thus:—Males, 6·105 per cent., or about 61 per 1,000; females, 1·723 per cent., or about 17 per 1,000. I was asked by Dr. Graham if I would state the method under which the inmates were admitted to the institution

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institution—to describe the process from start to finish. The plan adopted is this: A person applying within the metropolitan area for admission to one of these institutions goes in the first instance to Dr. Payton for medical examination. Dr. Payton certifies if he is fit, and I issue the order at once. We take a history of the applicant given by himself, with regard to which we make subsequent inquiries through the medium of the police, if our own inspectors are not in the district to do so. When the applicant is admitted the medical officer at the institution, in the first place, makes a careful examination, and then keeps him under observation. If it is found to be an improper case, that is to say, if the man is found to be fit, strong enough to work outside—because a good many get in through malingering in the first instance—he is discharged. If it is a proper case for the institution the man is kept. If it is a case in which an operation is required, or if it is a case for a general hospital, he is transferred to one of the hospitals. I hand in for the information of the Committee a copy of the blank form to be filled in, showing the history of the applicant. [Appendix B 2.] If it is a country admission the application is generally made through the medium of the Police Magistrate, the Clerk of Petty Sessions, or the police, or the applicant comes from the local benevolent society or the local hospital. Then this form [Appendix B 3] is sent up. It asks for information with reference to the name, birthplace, and age, the circumstances of entering the hospital or benevolent asylum as the case may be, the period of residence in New South Wales, occupation, and the names and addresses of relatives in full; also, whether the applicant has any relatives in any of the colonies willing or able to support him, whether the applicant has ever been an inmate of a charitable institution, whether he is an Army or Navy pensioner, or whether he has any other means of support; the amount of money in possession of the applicant or in the possession of friends; whether he has any legal claim to or is likely to become entitled to any land, investment, or other property. Then the medical officer in the town certifies as to whether the applicant is physically capable of earning a livelihood, and whether his case is not one which should be properly treated in a general or local hospital; and he is also required to state if the applicant is able to travel alone. When we get that information we send a railway-pass; or, if the case appears to be an urgent one, upon the first application coming in we send the railway-pass on in advance, so that there shall be no delay. When the applicant is admitted from the country he goes through precisely the same process at the asylum as if we had sent him on direct from Sydney. Perhaps I might here give a detailed statement of the existing methods of dealing with the various classes of dependent persons in this Colony. First, there are the Government Asylums for the infirm and destitute, containing between 3,000 and 4,000 inmates, whose average age is about 63 years. These are wholly supported at the cost of the Government; and the expenditure last year was about £60,000. Mr. Brunker, the Chief Secretary, who takes a most humane and personal interest in the requirements of the poor of all classes, has a Bill in the hands of the Parliamentary Draftsman which will probably reduce the number of inmates to some extent, or at least lessen their cost, as among many other matters it provides for compelling near relatives to pay towards maintenance cost, and makes grand-parents, children, and grand-children jointly and severally liable for each other's support according to their means. I have no doubt that this will prevent a good many persons from drifting into the asylums if it becomes law. The other class of dependents wholly supported by the Government without any voluntary contributions from the public are twenty-two aged married couples in cottage homes at Parramatta. This system may probably be extended in the near future, if Mr. Brunker's proposals are carried out, to about thirty aged married couples who are now separated in the different Government Asylums, and thirty to forty others who are awaiting admission. Then the Government contributes from the annual Parliamentary Vote for the relief of destitute persons, without any assistance from the public, to the relief of eighty-eight widows, twenty-four deserted wives, twenty-two aged persons, sixteen old married couples, thirty chronic invalids, and eight blind persons. The widows and deserted wives have families. I have had a number of typical cases from each division compiled for the information of the Committee. The Government Statistician has already supplied figures relating to several sectarian societies; and their methods are to supply indoor relief to the aged in some cases, and outdoor relief to both aged dependents and others. The largest State-aided relieving society in Australia is the Sydney Benevolent Asylum. It gives outdoor relief in the shape of partial rent allowance to 1,000 separate families, including widows, deserted wives, and the aged poor, and its expenditure under this heading last year was £4,235 1s. 4d. During the present year, however, the Government has extended the functions of the society to the relief of the families of the ordinary unemployed. There are now about 800 separate families receiving relief under this heading; and the cost this year may reach £5,000, judging by the manner in which the numbers are increasing.

77. You say there are 800 families of the unemployed now receiving assistance? Yes.

78. From whom do they receive the food or money? They apply to the Benevolent Asylum for it, and this money is given to the Benevolent Asylum by the Government from the Consolidated Revenue.

79. Mr. McGowen.] Last year the same people were relieved from the Labour Bureau were they not, in the same way? Not to that extent; nor as liberally. Mr. Creeer will be able to give you the figures.

80. He gave them rations, did he not? Yes. I will deal with that a little later on. The Benevolent Society takes every precaution to prevent imposition, and has a report in every case of relief. The next largest society of this character in New South Wales is the Newcastle Benevolent Society, which is managed on the same lines as the Sydney Benevolent Society, except that it provides for aged inmates indoors, and has several cottage homes, as well as the outdoor relief system. It is supported by private subscriptions, subsidised by the Government. There are at present twenty men and twenty women in the institution all over 70 years of age; 320 families are receiving outdoor relief, a large number of which consist of widows with children, and there are also a number of deserted wives. The expenditure in outdoor relief last year was £2,606, or £500 more than in the previous year, and the cost of inmates of the asylum was £745 in addition. The following is a short statement of the methods adopted by nearly every other charitable organisation in this Colony:—Parramatta Benevolent Society—Outdoor relief. Thirty-four families (including fifteen destitute widows) on books, regularly receiving relief, and about six other destitute families who receive temporary aid. One husband in gaol, two years to serve, others away looking for work. About twelve beds supplied to indigent persons passing through the town every week. St. Mary's Benevolent Society, near Penrith—Outdoor. Seventeen families get occasional help—eight of these helped every month. Four of these old and unable to work, no means. Three widows with families. Expenditure in relief, £30 11s. 3d. Goulburn Ladies' City Mission and Benevolent Society—Outdoor.

106 separate families receiving relief at the present time. Last Christmas, 62 dinners provided for poor in their own homes, 565 parcels of groceries sent to poor families, which comprised 802 distinct persons, including widows and deserted wives. In other cases assistance given in raiment, shelter, beds and bedding, furniture, and train-fares, boots, board and lodging, and medicines. In addition to this, 412 hungry men (unable to obtain work) were supplied with rations during the year. North Sydney Benevolent Society—Outdoor. Relieved 233 families since August, 1894—many on books whole time—now issuing 130 relief orders for food. Majority of families in miserable condition, and nearly all living in bag-huts or in caves. Causes—old age, decrepitude, want of work—deserted wives and children. Local doctors give services gratuitously. Expenditure, £165 9s. 1d. last year. Sydney Rescue Work Society—Indoor and outdoor. Home of Hope, Stanley-street, Newtown, houses and provides for 52 women and 23 children. Open-all-night refuge houses, and feeds 48 women and 10 children. Jubilee Home provides for 3 women. Outdoor relief in the shape of food and rent paid in odd cases and sometimes train-fares; occasional gifts are made of clothing, beds and bedsteads, furniture, boots, and temporary board and lodging. Expenditure for 1895, £1,421 0s. 4d. Petersham, Marrickville, and Dulwich Hill District Benevolent Society—Only outdoor relief provided. Thirty-two families now in the books. Average expenditure £20 per month. Bathurst Poor Relief Society—There are 9 inmates in the home—4 women and 5 men—and 71 families receiving outdoor relief in the form of food, fuel, and clothing. Widows, unemployed, old and decrepid men and women, and the families of persons who are in gaol. Relief expenditure for year, £400. Kogarah Ladies' Benevolent Society—Outdoor only. Except in cases of sickness, when sufferers are removed to Cottage Hospital. Forty families in books, comprising 125 children. Expenditure, £284 3s. 11d. Forbes Ladies' Benevolent Society—Outdoor only. Twenty-eight families relieved with food, clothing, blankets, and fuel, including old men and women past work—deserted wives and children. Cooma Ladies' Benevolent Society—Outdoor only. Thirty-four families supplied with food, fuel, and clothing. Uralla Ladies' Relief Society—Outdoor relief only, orders issued for relief in 92 cases—53 regulars and 39 casuals—expenditure for half year, £20. Tamworth Ladies' Benevolent Society—Cottage home for aged and infirm, as well as outdoor relief. Now in home 2 old couples aged 68, 70, 74, and 78, and one widow who is a cripple. Outdoor relief given in 126 cases, to 318 individuals. Deserted wives painfully prevalent; only 24 families regularly in the books, 9 are aged and infirm widows, and 3 are aged and infirm couples, while the others are either too old to work, too ill to work, or unable to obtain work. Expenditure, £300. Liverpool Ladies' Benevolent Society—Outdoor relief only. Twenty-eight persons relieved during the half year. Fifteen now receiving relief. Rent paid in four cases. Hay Benevolent Society—Outdoor relief only. Mostly old men in search of work—few families. 260 cases assisted during year. Expenditure, £107 3s. 3d. Singleton and Patrick's Plains Benevolent Asylum—Indoor relief only. Eleven individuals now in asylum—7 males and 4 females. During year, 35 males and 16 females were admitted, which, with 17 in the institution at commencement of year, made up a total of 68 persons relieved. Expenditure, £400. Tumut Ladies' Benevolent Society—Outdoor relief only. Fifteen cases relieved during year, chiefly indigent persons suffering from typhoid. Expenditure, £25. Armidale Ladies' Relief Society—Outdoor relief only. Fifteen families constantly in books, including 5 very old couples, and about 18 casual cases dealt with each month. Expenditure for year, £180 4s. 2d. Young Benevolent Society—Outdoor relief only. Eleven families now in books, including 4 aged and infirm widows, 4 married women with children (husbands out of work), and balance infirm women. Expenditure, £22 7s. 6d. Narrabri Ladies' Benevolent Society—Outdoor relief only. Eighteen families now in books; nearly all cases in which husbands absent seeking but unable to obtain work; few old and infirm; 72 different families were relieved during year, consisting of 169 persons. Expenditure, £84 4s. 10d. Penrith District Benevolent Society—Outdoor relief only. Sixty-one families, comprising 271 individuals, were relieved during year. There are now 19 families on the books; old age, destitution, want of work. Expenditure, £118 7s. 7d. Newcastle Mutual Help Society—Outdoor, clothing only. To help distressed families to send children to school. 300 families, comprising 1,300 children, assisted during year; 1,991 garments cut out and distributed among 1,287 children, 14 men, and 39 women, at a cost of £109 12s. 7d. for material. Albury Benevolent Society—Outdoor relief society only. There are now 24 families receiving weekly supplies of food, clothing, fuel, and rent. Expenditure not given. Narrandra Benevolent Society—Outdoor relief only. Nine families now receiving relief; mostly widows with young families, and a few very old and infirm people helped monthly, comprising 9 permanent, and remainder casuals. Expenditure, about £120 per annum. Queanbeyan Benevolent Society—Outdoor relief only. Three families being relieved, including old married couple aged about 80 years each, and 2 widows aged about 70 years each, and 10 other cases relieved. The maximum relief given in each case was fixed at 2s. 6d. per week by the rules of the society. Expenditure, £32 7s. 6d. Newcastle Relief Society—Outdoor relief only. Relief in food and clothing given to families, widows, ordinary unemployed, and sailors waiting for ships. Expenditure, £86. Milton and Ulladulla Benevolent Society—Outdoor relief only. Eight families receiving relief (clothing, groceries, firewood, and rent). One very old couple quite destitute and unable to work. Thirty-six families, consisting of 150 persons, relieved during the year. Expenditure, £165 2s. Kiama Benevolent Society—Outdoor relief only. Thirty families getting relief (groceries, clothes, fuel, and, in some cases, rent). Expenditure not given. Cootamundra Benevolent Society—Outdoor relief only. Eight families receiving relief—old and infirm, and families; husbands away looking for work. Expenditure not given. Mudgee District Benevolent Society—Outdoor relief only. Seventeen families in books, 7 being aged widows, 2 young widows with children (invalids), 3 aged men, 2 aged married couples, and 3 married couples out of employment. Clothing, food, fuel, and, in six cases, rent. Expenditure, £140. Hawkesbury Benevolent Society—As an asylum this society affords shelter, food, and clothing to 104 persons, comprising 82 males and 22 females. At present there are 20 old and infirm paupers in the institution. 382 rations were supplied to outdoor paupers, and there are now 14 outdoor families receiving food, fuel, and clothing, and, in some cases, rent. The expenditure for the year was £1,086 9s. 2d. Wollongong Benevolent Society—Outdoor relief only. Eleven families and 3 individuals are at present receiving outdoor relief. The average relief is 5s. per week to each family. Expenditure, £105 15s. 2d. Maitland Benevolent Society—There are 50 inmates in the institution, and they are all old people. 154 old people were provided for in the asylum during the year. There are 80 families now receiving outdoor relief. The expenditure was over £1,000. Bourke Benevolent Society—Outdoor relief only. 145 families relieved during the year. Rations, nourishment in sickness, doctors, and nurses, clothing and bedding; expenditure,

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expenditure, £162 11s. 5d. Balmain Benevolent Society—Outdoor relief only, 203 families receiving relief during year; expenditure, £253 4s. 8d. Bega Benevolent Society—Outdoor relief only. Nineteen families receiving relief; expenditure, £24 12s. 11d. Leichhardt Benevolent Society—Outdoor relief only; expenditure, £305 15s. 8d. for the year. Grafton Benevolent Asylum—In and outdoor. Ten inmates in Home, aged up to 75 years. Fourteen families receiving outdoor relief; expenditure, about £450. Hillgrove Benevolent Society—Outdoor relief only. Ten families receiving relief. Erskineville Benevolent Society—Outdoor relief only. Fifty families relieved. Randwick and Coogee Sick and Poor Relief Society—Outdoor relief only. Twenty-eight families receiving relief; expenditure, £202 12s. 10d. Glen Innes Ladies' Benevolent Society—Outdoor relief only. Fifteen families relieved, 7 of whom are permanently on the books. Expenditure, £100. Sydney Charity Organisation Society—Outdoor relief only. Relief provided for 960 married couples, 397 widows, 169 deserted women, 17 single women, 636 single men, 2,732 children. Expenditure, £736 19s. 11d. per annum. Queen's Fund—Outdoor relief only. Relief granted to 193 widows, 31 married couples (husbands incapacitated), 23 single women. Expenditure, £791 14s. per annum. Wagga Wagga Benevolent Society—Outdoor relief only. Thirty-six families receiving relief. Expenditure, £50. Waterloo and Alexandria Branch of the City Mission—Outdoor relief only. Forty-six families receiving relief. Gulgong Relief Society—Outdoor relief only. Nine families wholly supplied throughout year as well as temporary relief given to numerous casuals, and large quantity secondhand clothing and new garments, boots, &c., distributed. Widows with children and families whose husbands are incapacitated or not able to get work. Broken Hill Benevolent Society—Outdoor relief only. Twenty-three families now receiving relief. Expenditure during the year, £368 1s. 3d.

81. *Chairman.*] Do any of these societies receive Government aid? Yes, many of them.

82. At what rate? Usually they receive pound for pound.

83. But in some cases they get special grants? Yes.

84. *Mr. McGowen.*] The Central Mission has started charitable work in York-street, opposite Wynyard-square. You are aware that they take up the waifs and strays, and supply nurses in cases of sickness, and give food? Yes. I have not obtained the figures in reference to that institution. It is included with a few others, which, from my knowledge of the circumstances, I have put down as affording relief to sixty cases in all. In my previous evidence I was questioned as to the cost of the inmates of the Government Asylums, and I accurately gave it under the usual method of dealing with this matter here and elsewhere, at between £14 and £15 a year, or about 10d. per day. This, however, only relates to all charges for maintenance and clothing, salaries, management, and so forth, and does not include interest on the value of buildings or estate, nor the yearly cost in repairs nor depreciation in value of property. If you include all these in the estimate, as should properly be done if the matter is dealt with on a purely business basis, the annual capitation cost will be increased by about £3 10s.—making it in all about £18 10s. a year, or a fraction over 7s. a week. I have already said that I do not think a person could live decently outside on less than 10s. a week, which would be a very moderate charge for lodging, food, clothing, tobacco, and the occasional comforts which old age frequently renders necessary. Of course where the aged poor could be placed with their own relatives this sum might be considered a liberal allowance. One very strong objection raised to old-age pensions wherever they have been suggested is that they would materially affect the labour market by enabling the pensioners to improperly compete with younger men by working for lower wages. I really do not think there is any force in that objection, for from what I know of the mechanical trades and other occupations requiring physical force there is very little chance of men of 60 years and upwards obtaining employment of this character. That is one reason why so many of them are content to remain inmates of the Government Asylums, and do necessary work about the place for small payments and a home. They realise quite well, and will tell you so, that it is useless for them to endeavour to compete with men of full vigour outside. But this is a difficulty that would in any case, I think, be easily overcome. The matter might be so regulated that the pensioner should forfeit the whole or a portion of his pension if he obtained work according to the amount which he earned. Spender has some interesting diagrams relating to this question in England, in his book "The State and Pensions in Old Age," pp. 26, 28, 30, 34, 35, 42. These diagrams indicate the rise and fall of wages during life. At 60 years of age a very small proportion of engineers are able to obtain work; smiths, fitters, turners, moulders, pattern and boiler makers become incapacitated at 60, and iron and steel workers at 50 years of age. After the age of 60, 10 per cent. lived on their previous savings; 50 per cent. depended upon relatives, unions, and clubs; and 40 per cent. helped out their resources by parish relief. The chief earning period for carpenters was between 25 and 50 years of age, while after 50 there was a rapid decline. The Amalgamated Union of Carpenters, therefore, fixed its superannuation age as early as 50. Miners become incapacitated at 60, and at that age their fate appeared to be much the same as iron and steel workers. It was impossible to find out what became of seaman after 45 years of age, as they could not obtain employment, and their average death-age was fixed as early as 30. It is stated that if seamen do chance to live to old age they become wholly dependent. In the railways the skilled workmen are generally incapacitated from work of that description at 60. Dockside and agricultural labourers are generally worn out before 60. The age at which persons in factories cease to be employed is generally under 60. I believe the figures here quoted will, upon inquiry, be found to fit exactly the conditions of labour in this Colony; and it should be easy to obtain the statistics from some of the labour organisations with sufficient exactitude to arrive at a fairly accurate test. At any rate I think they dispose of the objection that old-age pensions would be likely to affect the labour market in regard to wages rates, and show that the pension age should be fixed at 60 years. In reference to the question, "Is out-door relief of all descriptions increasing largely, and if so, to what extent?" I think I shall be within the mark if I say that during the past ten years it has increased quite 50 per cent., and the greatest increase has taken place during the past five years. You could, of course, obtain these figures with mathematical accuracy from all the charitable relief societies of which I have given you a list; but I think my statement will be nearly correct. During the past two or three years out-door relief has from time to time been afforded, and is now being given, to a class who never dreamed, as a body, of applying for it previously—I mean respectable unemployed working men. Apart from other agencies there are now 800 families of this class receiving weekly relief from the Sydney Benevolent Asylum. I cannot tell you how this has come about; and it may be that the prevailing distress is not abnormal, but that in former periods these classes remained in a state of partial want. I am unable to express an opinion upon

- upon the point of any value, and my time has been so fully occupied always that it has been impossible for me to endeavour to arrive at the causes of all this distress, although I should very much like to have done so; and I daresay a solution of the matter might be arrived at by careful impartial inquiry. It would not, in my opinion, be of much use to listen to any theories on this subject, or any opinions that are not borne out by thoroughly reliable evidence. It is certainly sad that all these people cannot obtain work instead of charity; for I have observed that the present system of help completely demoralises many of them. I have frequently noticed that when these men or their wives first come for help they are thoroughly ashamed; the second time this sentiment is sensibly blunted; and, after two or three applications, they ask for relief as a matter of course, and are full of objections if it is not fully up to their conception of what it ought to be. I am sure this has been the experience of every observant official who has had to deal with this matter; and the worst of it is that not only are the fathers and mothers thus affected, but the children, who know how food and raiment are being obtained, are being trained, by observation, to believe that it is easier to beg than to work. This must be the inevitable result. It was supposed some time ago that a good deal of the distress was caused by the influx of unemployed and of paupers from other colonies. I had a careful inquiry made, so far as the Government Asylums were concerned, and last year I found that the number of inmates from outside the Colony did not exceed fifty out of a total of 4,000; and of those between twenty and thirty came from foreign countries or British ships. There were thus only about twenty-five from all the other colonies combined; and of these, I think, only seven came from Victoria. Of course I had no means of dealing with the unemployed in this way; but Mr. Creer may possibly have some statistics that would guide the Committee. I think, however, that the accuracy of information supplied upon this point from any source should be carefully tested, and not received as a matter of opinion. If it is eventually determined to try a pension scheme tentatively, I would suggest that the experiment be tested under a variety of methods, viz.—1. By selecting a number of the respectable old inmates of the Government Asylums and letting them endeavour to live outside upon any sum that would be considered a fair pension for the purpose, under a national policy. 2. By boarding a few out with families who might be found willing to take them. 3. By boarding others with their own relatives who might or might not be able to contribute towards their support. They could be kept under observation in the same way that boarded-out children are supervised; and it could easily be ascertained in the course of a few months whether it would be wise, on grounds of economy or expediency, or having regard to the welfare of the pensioners, to continue or extend the experiment. This tentative scheme would also, as it became generally known, enable the administrators to ascertain if the revenue was likely to be swamped by applications for pensions from aged persons who would not under any circumstances go into a Government Asylum if they could possibly exist outside.
85. *Chairman.*] With regard to what is known as the pauper vote, can you give the Committee any particulars as to the way in which it is administered, and who are the recipients? This vote is used for the relief of destitute persons of various classes who do not wish to go into a public institution. These include widows who wish to keep their own children rather than have them boarded out; also a number of aged persons—16 old married couples, 30 chronic invalids, and 8 blind people. The method is this: The application is made sometimes to me, sometimes to the Chief Secretary's office. If it is a country case, a circular is at once sent on to the police, in which they are instructed to make a report. If they find it is a case requiring immediate relief, they are to relieve it as far as they think fit without delay. Then the report comes into my hands, and I make a recommendation to the Chief Secretary. If it is a town case, one of my own inspectors is sent out to do the same thing, and the relief is generally given in accordance with the recommendation I send in. But it is given from time to time. The application is renewed every three months, in order that the recipient can be kept under observation, and it may be known if the conditions alter in any way so as to either cause the relief to be discontinued, or increased, or reduced.
86. Is not assistance sometimes granted to genteel people who may temporarily get into a state of distress? Yes, from this vote.
87. *Dr. Graham.*] Is there a fixed sum voted by Parliament? No; it is taken out of a vote for the relief of destitute persons. There is no fixed sum; but the expenditure this year I suppose will come to £12,000.
88. Is not portion of that money disbursed off-hand by the Colonial Secretary sometimes, or by the Principal Under Secretary, without your cognisance? Yes; but the case is sent on at once to me. It is very rarely it is not sent on at once to me for report, unless the case is absolutely known to Mr. Brunker or Mr. Walker. If it is obviously a case of distress, relief is given in the Colonial Secretary's office at once, so that there may be no hardship. Then a statement of the case is sent on to me, and I cause inquiry to be made, and a report to be furnished, and the Chief Secretary, I may say, has invariably been guided by these reports.
89. *Chairman.*] But in some cases relief is given in a confidential manner, is it not? Very rarely. I do not think you will find it has been done in half-a-dozen cases during the year; that is, where inquiries have not been made. Of course this business has to be conducted with tact, and I am guided by the nature of the case in regard to the officer whom I send to inquire into it.
90. *Dr. Graham.*] In your evidence just given did you give the Committee any idea of the systems adopted in other colonies? I have not done so because the information sent to me varies so much. I do not believe you will get any accurate information for the purpose of comparison in regard to the other colonies unless you send an officer round to inquire.
91. There must be some system, loose as it may be, adopted in the other colonies;—how do they take care of their paupers? I can tell you in a general way. With reference to Victoria, for instance, there they have benevolent asylums which are partly supported by Government subsidies and partly by voluntary contributions. They are pretty well on all fours with our Benevolent Asylum here. There is also a method of outdoor relief, but as far as Government funds are concerned it is a very limited one. I have written for figures on the subject, but have not received them.
92. What do they do with their old people then? Their old people go into the institutions I have just mentioned.
93. But there must be a great number there? Yes, a very large number, but I cannot give the figures accurately without referring to the reports.
94. Do they go on the system of isolating their chronic sick from the destitute people? To a limited degree it is done.

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1 July, 1896.
95. So that their paupers include the chronic sick too? The proportion is very small. The manager from Victoria was here a few weeks ago, and he visited our institutions, and he said we were doing altogether different work from that done by the institution he had charge of in Victoria, particularly with regard to the class you are speaking about. In South Australia they have the institution and the outdoor relief system combined; but the outdoor-relief system is their main method of relieving distress. I am writing for returns on these matters, but I have not yet obtained the figures with sufficient accuracy to be enabled to place them before the Committee.
96. Can you tell us anything about Queensland? They have institutions there, and they have outdoor relief also.
97. I understand they have a specially comfortable way of dealing with old couples there? I call it ostracising them. They put them on an island. Here we deal with our old couples by putting them in cottage homes at Parramatta, where they can exercise the rights of free citizenship, and go in and out of the institution just as if they were in their own homes.
98. *Mr. Neild.*] But that only provides for very few? We have only twenty-two; but we have other cottages at Newington which I have suggested should be used for this purpose until the system is extended in connection with the general policy submitted by the Government for the consideration of the Public Works Committee a short time ago. In Queensland they do not touch these old couples at all unless they are 70 years of age or over, and then they put them on this island.
99. Is there a medical man on the island? That I cannot say. I suppose not, as there would be no other work for him there. I suppose he would go off only when sent for. But it must be a terribly dull life for the old people—they see nobody but each other.
100. The island is some distance from the city? It is some distance from the city, because there is a steam-launch which goes there with provisions and general supplies.
101. *Dr. Graham.*] Could you give us a summary of the English system of poor law relief? I can do so from memory. There is the workhouse relief, and combined with that there is the system of outdoor relief. I have not the figures with me showing the extent of each, but I can get them in a few moments in the office.
102. What form does the poor relief take—money? In some cases, yes; but it is the dual kind of relief in many cases, as at the Sydney Benevolent Asylum.
103. Do they get money there too? Yes; they get a contribution towards their rent. In nearly all the English Unions, however, they only get provisions.
104. Do you know what the outdoor relief comes up to in England per head;—does it exceed 2s. 6d. per week? I do not think it is quite so much as that. I know it does not exceed that, except, perhaps, in very rare and exceptional cases.
105. Is there any method adopted of ascertaining the antecedents of the people under your charge? Yes; I have already explained what is done in that respect. A history of each case is obtained in the first instance.
106. After an elaborate inquiry made in England regarding the antecedents of the destitute people dealt with in the institutions, the conclusion has been arrived at that only a very small proportion reach the poor-house by reason of old age *per se*;—is that your experience here? No; the fact that of the 3,500 people in my institutions the average age is 63 years answers that question as far as we are concerned. Patients for hospital treatment include the only young or comparatively young people admitted here.
107. Would not the fact that such a large number of destitute children are thrown on the care of the State in this Colony indicate a large proportion of destitution among comparatively young people in the community;—the mere fact of both the mother and father being unable to take care of their child or children would be an indication of the extreme state of their poverty? In most cases that would be so.
108. Do you not think that the number of young children thrown on the care of the State in this country is very large? Yes, I think it is large taken as a gross number, but I am not prepared to say that it is out of fair proportion to the general population, compared with elsewhere.
109. Do you not think that, in a measure, that is one way of ascertaining the amount of poverty which does not come under the eye of the State, because the chief aspect of poverty we see is that which is common to old age; the other we have to infer largely from signs such as are apparent from the fact I have just mentioned? I could get you some figures from the records of the State Children's Relief Department which would give you very positive information on that point. A disproportionate increase in the number of State children is undoubtedly an indication of the increase of poverty.
110. Not only the increase of poverty, but the extent of poverty among the younger people—the married people who have not reached the pauper age, and who are destitute? Yes.
111. We have no means of ascertaining their condition—they struggle on as best they can? Yes. The children we take are principally the children of widows or deserted wives, and in some instances of people who are unfit to keep their own children. A history of each case can be given if required.
112. *Mr. McCowan.*] You stated that some of the inmates of the asylums received small sums for work done in the institution. I understand the work they have to do consists in waiting upon their bed-ridden fellow inmates—those suffering from consumption and cancer, for instance? No, I did not allude to those. The inmates to whom I referred more particularly were the carpenters, tinsmiths, bootmakers, gardeners, cooks, and others of that class. Except in the case of cancer patients, where the duties are terribly disagreeable, the ordinary wardsmen are not paid.
113. The fairly strong man or woman in your institutions has to do something in the way of assisting others who are too weak to do anything for themselves? Yes; that is part of the system.
114. Do they have to sleep in the same ward? Yes.
115. Do you think there is any danger, from herding them together in this way, of these inmate attendants catching such a disease as consumption or cancer? There is no danger in the case of cancer. I should not have the slightest objection to sleep in a cancer-ward myself, so long as the place was kept pure. With regard to consumptives, that is another question. What we do in that case is to get the stronger consumptive men to wait upon the others. There are no contagious cases in the institutions except consumptive cases.
116. *Dr. Graham.*] These must form a very small proportion, inasmuch as consumption is not a disease of old age? Yes, a very small proportion.

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117. *Mr. McGowen.*] I should like to know the number of consumptive patients in your asylums, and their average death-rate? I have already given the information in the form of a table.

118. *Dr. Graham.*] You stated in the early part of your evidence that the reason why the cost of pauper maintenance in this Colony is somewhat high was because we included amongst our paupers a class who were really hospital patients? Yes. In my opinion hospital patients should be in a separate institution under hospital treatment, and I take such cases to include consumptive, cancer, and ophthalmic cases.

119. But that is the reason you give for our methods being more costly than those of other countries? That is one reason. Then we deal with a larger proportion of general chronic cases than are dealt with in the other institutions. We deal also with another class I have not mentioned. When Government patients are convalescing at the general hospitals they are very frequently sent on to one of the asylums. For instance, suppose a man has an accident, and breaks a leg. When he is fairly able to get about, instead of keeping him at the hospital at a cost of about £60 or £70, they send him on to one of my institutions, where it only costs for the hospital patients between £19 and £20 a year.

120. And these all go to swell your statistics as paupers? Yes; they are all down as paupers, because they are kept wholly at the public cost.

121. *Mr. McGowen.*] What is the average cost of the patients in your asylum? The average cost for yard patients is about £11 18s.—those are ordinary inmates. The average cost of hospital patients is from £19 to £20. I should like to mention that the dietary scale I handed in only applies to the ordinary patients, and not to hospital patients; the latter get whatever is prescribed by the medical man.

122. *Mr. Neild.*] With reference to the ages of the inmates of the asylums, do these inmates reach you at an advanced period of life, or are the majority persons who have grown old in the asylums? They reach us at an advanced period of life.

123. I do not suppose you have the exact figures, but could you give us any idea of the average age at which pauper inmates reach the asylums? I could give you the figures to a certainty by getting the returns compiled in the office. We have the age of every man in his history-form as he enters.

124. I think you stated the other day, with reference to the application of any system of outdoor relief or old-age pensions, that only 500 or 600 of the total number of inmates in your institutions would, in your opinion, be suitable to be recipients of such a system? Yes.

125. Would the disability for outdoor relief involved in your answer arise from old age, from sickness, or from habit? From habit in some cases; from incapacity to look after themselves in other cases.

126. That is practically old age? Senile debility, I suppose, you would call it. A lot of them are a class of people who, if they were not with me, would be with Dr. Manning. There are 1,600 inmates who are in and out of the hospital always.

127. Would it be possible for you to ascertain the proportion of those different causes of disability? Yes; I could give the numbers in each class.

128. *Dr. Graham.*] Are you quite sure about the number being 500 or 600? I am very close to the actual number in that estimate. Of course, it must only be an approximation, because I could not know the character of every one of the inmates. Some idea of the number is gathered by inquiry among the decent old people in the institutions, and by what is learnt in dealing with casuals. We know how the inmates behave themselves, because we have them coming up for one offence and another. We know also by the number of hospital patients, and we know by the other class—those who must be kept under some sort of restraint.

129. *Mr. Neild.*] Do you think you could supply the Committee with somewhat similar information with reference to the inmates at the time of entry? It would be very difficult, but I could arrive at a fairly approximate estimate by referring to the history-forms, and to the causes which led to their coming in, because there is a medical certificate in every case.

130. With reference to the figures you have been good enough to put before the Committee this afternoon, I should gather roughly that there must be a larger number of persons in distressed circumstances receiving outdoor relief in the Colony than the number that are in the asylums themselves? Yes, a very much larger number.

131. Do you think there is information available to show the proportion of outdoor relief in other colonies? It is very difficult to get that information. I do not know how it is, but I have got different returns on different occasions; and it appears to me that the only way to obtain this information would be to let one of my officers—I could not go myself, that would be out of the question—take a run round and observe the class of people, and from personal observation see whether or not they are similar to the classes of inmates with whom we deal here.

132. *Dr. Graham.*] Suppose we tried the experiment you suggest as being a feasible one, and took a certain number of people and put them on the relief system, do you not think that the mere knowledge of such a circumstance being spread abroad would create a sort of panic among destitute people who would clamor for the same privilege? There is no doubt it would. Pauperism is about as contagious as smallpox. That is one of the objections to the proposal. If you could keep it within limits I should not hesitate to say at once, adopt the proposal as our national policy of dealing with the deserving aged poor.

133. Is not the entrance into a poorhouse in England regarded as an automatic test of poverty? Yes; and they make the life inside so very hard, as far as I am able to judge, that a person would be very hard put to it before going in.

134. But do you not think that is a safeguard to society? Undoubtedly; but what about the humanity of it to the poor?

135. But what about the peace of society? That is the trouble. As I said the other day, it is very easy to talk about reducing pauperism, as some people do in England, by doing away with the outdoor relief system; but they do not say what has become of those people who have been subjected to this restrictive method, and they do not take them into the institutions. Therefore the logical conclusion is that they must leave them in a state of starvation.

136. *Mr. Neild.*] Or that they have gone elsewhere? Yes.

THURSDAY, 2 JULY, 1896.

Present:—

Mr. CHAPMAN,  
Dr. GRAHAM,  
Mr. SCHEY,Mr. MCGOWEN,  
Mr. McLEAN,  
Mr. WILKS.

E. W. O'SULLIVAN, Esq., IN THE CHAIR.

George Henry Pitt, Esq., further examined:—

G. H. Pitt. 137. *Chairman.*] You desire to supplement the evidence you gave on the previous occasion? Yes.

2 July, 1896. 138. Will you lay before the Committee any further information you may have? Assuming that the risks incidental to wage-earners are alone to be considered, there are six forms of insurance necessary to cover all those to which they may be exposed, which are:—(1) Invalidity—(1) Provision for temporary sickness and accident. (2) Provision for permanent sickness or accident. (3) Loss of wages through want of work. (4) Annuity for old age. (5) Insurance to family in case of premature death. (6) Provision for burial. Germany, under the 1889 law, endeavoured to provide for all but class (3), making the insurance in each case compulsory; but for the sake of brevity, I will confine myself to remarks on old-age and invalidity pensions.

*Old-age pensions.*

*The German Scheme.*—The State directly undertakes the work, and administers it through local Boards. Contributions are obligatory upon three defined classes. Men and women, 16 years of age and upwards, employed as:—(1) Workmen, assistants, apprentices, and servants receiving wages. (2) Shop assistants, apprentices not earning £100 a year. (3) Persons employed in the mercantile marine. Optional to others to join at the discretion of the Federal Council. Benefits conferred.—To all the assured the State gives the right to an allowance in infirmity, that is, inability to earn wages, and an old-age annuity at the age of 70 years. Pensions are only granted for infirmity after five contributory years; and for old age after 30 contributory years. But, in order to embrace those who would otherwise be disqualified, it was provided that any person who, before the Act was passed, had been employed in an occupation in which contributions would have been payable had the Act been in force, should be treated as though he had actually paid the contributions. This difficulty, which is common to all initiatory schemes kindred to that under review, might have been avoided by confining the benefits to the rising generation, which step would have postponed the old-age pension in Germany for 30 years, and the invalidity pension for 5 years. Contribution rates have been fixed for 10 years at from 1½d. to 3d. per week (according to the amount of wages earned), to be paid in equal shares by employers and workmen. With regard to the old-age pensions, the amounts vary from £5 6s. 5d. to £9 11s. a year, and are not intended to provide sufficient means of support, but to supplement any other means possessed by the pensioner. The pensions are payable monthly in advance, and can be neither pawned nor sequestered. They also remain in abeyance so long as the pensioner is in prison or in a foreign country. The contributions are collected by means of cards divided into spaces for 47 weeks, and when paying him his wages the employer must affix a stamp representing the weekly contribution on each workman's card, deducting half the value from his wages. Forty-seven weekly contributions are reckoned as one full year's payments, and during certified illness not exceeding a year, or military service, the contributions are credited as if they had been paid. Any deficit in the fund at the termination of the first ten years of its existence must be met by the imposition of a higher rate of contributions for the next period of five years. Estimated cost to the State: Practically the fund is sustained by contributions of one-third each from the workmen, employers, and the State respectively. The first year's State subsidy was £320,000, gradually rising to £3,400,000 in the eightieth year, after which it is expected the State subsidy will be gradually extinguished, but this is only theoretical, and many contingencies may arise, such as strikes, depressions in trade, the occurrence of a war or a revolution, which must upset all calculations based on ordinary averages. The valuation is made on a 3½ per cent. basis, this being the average rate ruling for German Government stock. As the actuarial valuations are made periodically, any depreciation in the rate of interest must either diminish the benefits conferred or increase the contributions. The scheme includes some 12,000,000 of people, or about 25 per cent. of the total population.

*Danish Scheme.*—Denmark is the only other country which has a scheme in operation. In 1891 the Government announced the intention of imposing a tax on lager beer; the Opposition demanded that if the poor man's beer was to be taxed he should reap some benefit, hence the Government combined a pension scheme with the beer tax, devoting a maximum annual payment of £111,000 for the purpose of paying old-age pensions. The benefits extend to all persons over 60, not having sufficient means of support, who have resided in the country for not less than ten years, provided that during the ten years preceding the 60th year of age they were not inmates of poor-houses. The pensions are graduated, a larger pension being given to residents of the capital than to those of smaller towns, and country applicants receive still less. The pensions range from £6 15s. to £11 5s. for males, and from £5 12s. to £8 8s. for females, and are borne by the State and Communes.

*Compulsory Insurance in other Countries.*—The principle of State Insurance is old in theory as schemes have been propounded from the beginning of the present century. In England, as far back as 1772, a Bill for making provision for pensions to the aged was passed by the House of Commons, but the measure did not receive the approval of the House of Lords. I may here mention that papers on the subject have been read locally, one by Mr. A. Duckworth, of the A.M.P. Society; another by Mr. Anderson, Principal Librarian; also Mr. Colonna Close has given the subject careful attention. The Germans, however, were the first to legislate on the subject, and their action has had a stimulating influence on several European countries by awakening a general interest in schemes for the betterment of the masses. Germany and Denmark are the only two countries which have a system of State Pensions for the aged in operation, but a Bill passed the French Chamber in 1895 providing State subsidies to superannuation pensions for working men. For many years past the attention of political economists in England, Austria, Hungary, Italy, Belgium, Holland, Sweden, Norway, and Switzerland has been directed to the subject, and the adoption by Germany of the system has given a fresh impetus to their exertions, and

and public men in various walks of life, clergymen like Canon Blackley, statisticians like Charles Booth, politicians like Chamberlain, Morley, and Gorst, and actuaries like T. E. Young and R. P. Hardy are now engaged in investigating the scheme propounded. This is notably the case in England, where, in addition, a Royal Commission was appointed in 1893, to obtain evidence and report on the various schemes proposed, and to-day's (July 2nd) cablegrams inform us that further investigation is to be undertaken by a Commission of Experts appointed from the Treasury. The opinions of economists, statisticians, and others who have devoted considerable thought and time to the subject will prove of great value, and I have therefore selected, and herewith place before the Committee, the opinions of several eminent writers on the subject under consideration.

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### *Entitling Age or Age Limit.*

#### Arguments against adopting a uniform or high limit.

##### American Consular Report on German Scheme—

The age of 70 was so high for the working classes that extreme indifference, or even hostility, was expressed. The report was everywhere the same: "Seventy years old! I shall never live to that age." The actual percentage of those who reach this age among the labourers is so small that this high figure is felt to be a weakness in the law. It was, however, thought better to begin at this age in order that the actuarial calculations could be safely made. The cost of insurance at age 65 was so much higher that it was found impossible to begin at that age; but all the English schemes propose to start at 65."

##### T. Mackay, *National Review* :—

To the poor—the ill-fed, the dockers, the riverside labourer, the weather-tortured hawkers, the busmen and cabmen—the age limit of 65 would be a mockery and a delusion, for to them the annuity age is a promised land they can scarcely hope to enter. Carmen, cabmen, and waterside labourers are not likely to enjoy a pension long after 65.

##### W. Chance, J.P. :—

Old age does not always begin at 65—it may commence at 50, or even earlier. On the other hand, many men will do a good day's work up to 75. It is, in fact, quite impossible to say at what time of life old age begins.

##### C. S. Loch :—

A little more than half of old-age pauperism commences before the age at which any of the proposed schemes would take effect.

##### Spender :—

The corn porter who works in the hold of a ship, filling his lungs with the dust of grain, is early worn out. It is rare to find a man at this work much beyond the age of 40.

### *Against Compulsory Schemes.*

#### The President of the Institute of Actuaries—Discussion on Mr. Young's paper on German scheme.

The paper demonstrated with tolerable certainty the impossibility of this particular scheme, at all events, ever being adopted in the free air of England. They had done much of late, and it was quite possible that under democratic domination they might do still more hereafter to restrict individual freedom; but not till Englishmen ceased to be Englishmen would they submit, under compulsion, to a system which brought in its train such irritating supervision and interference as might be possible to a people steeped to their eyes in militarism, and used from their birth to a system of State control so persistent and universal that a youth might scarcely grow into manhood without bureaucratic permission. He had arrived at that conclusion with great reluctance. Though he never sought to act the part of Balaam, he should have been glad, like the author, Mr. Young, if he had felt constrained to bless this particular scheme, for he had to the abstract idea of compulsion no necessary repugnance. But the importance of compulsion consisted in its application, and he agreed with Mr. Young, that compulsion after this fashion was for Englishmen an impossibility. No one recognised more fully than himself the way in which the manliness of Englishmen had provided in a large measure for their own needs, but he could not also forget that much as had been done there was a great problem still unsolved.

Mr. Young, in the concluding paragraphs of his paper, says :—

In taking a final retrospect over my labour, I seem to myself—and with genuine regret—to have sustained the reversed roll of the Prophet Balaam. I appear to have started with a deep impression of the benevolent motives and probably beneficent effects of the measure, but as my inquiry extended I seem to have merged the prophetic benediction into a regretful production of social disunion, national disillusionment, and financial loss. I retain my admiration of the value of the object, and of the careful and ingenious though doctrinaire methods by which the achievement of that end has been sought. I can perceive, however, though at the moment dimly, that a symptom of national disease has been temporarily prescribed for in place of a direct attempt at gradual extirpation of the cause.

Opinions of Münsterberg, Aschrott, and Böhmert, whom the United States Consul reports as being the most eminent authorities on charity in Germany.

##### Dr. Emil Münsterberg writes :—

My opinion is that the social legislation has already had a favourable result in lightening the burdens of the poor fund, both direct and indirect.

##### Judge Aschrott writes :—

I can only give my personal opinion that by the insurance laws quite a good deal of the burden on the town charities has been taken off everywhere. On our inquiries in that respect we got a number of letters from poor law authorities in the various towns and cities, all agreeing that there has been a great change in poor law expenditure.

Professor Böhmert, head of the Imperial Bureau of Saxony, during twenty-five years in constant and active relations with charity work, gives it as his opinion that these laws already show a distinctly favourable tendency to lighten the charity burdens. Each of these authorities acknowledges that the law has not been long enough in force to prove the correctness of the opinions. The actual returns, so far, do not bear out the theories expressed. Had the scope of this inquiry been limited to the original motion of Mr. Neild it would have been necessary—1. To define the classes of persons who would have to be included in a scheme of outdoor relief, and who may be briefly described as paupers; 2. To ascertain the probable percentage of persons who reach 60 and 65 years of age; 3. And the number of such persons who come within the above definition; 4. To examine the results that have followed the substitution of a boarding-house system for the barrack plan. The following definition is sufficiently comprehensive :—A pauper is an impecunious person, who either from age or infirmity—whether bodily or mental—is unable to earn a living; or who is a permanent inmate of any public, denominational, or private institution or asylum,

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2 July, 1896. asylum, supported wholly or partially from State funds or private sources. The estimated population of New South Wales of persons 60 years and over, and 65 years and over, on the 31st December, 1895, was:—

Age.	Males.	Proportion to Male Population.	Females.	Proportion to Female Population.	Males and Females.	Proportion to Total Population.
60 and over .....	33,090	per cent. 4·83	22,310	per cent. 3·76	55,400	per cent. 4·34
65 and over .....	18,840	2·75	13,440	2·27	32,280	2·52

English tables show that of 100 persons who attain their 21st birthday, the number who reach

	Dr. Ogle's Tables.	Oddfellows' Tables.
60 years of age will be ... ..	54·01	59·47
65 years of age will be ... ..	43·90	49·19

The figures of the Oddfellows show better results than those of Dr. Ogle owing to the fact that only sound lives—those who can pass a medical examination—are permitted to join Friendly Societies. Sufficient data for the preparation of an Australian Table are not available, so any estimates must be to a great extent of a supposititious character, but the consensus of actuarial opinion is that owing to the existence of more favourable conditions—climatic and otherwise—amongst the working classes in these Colonies the longevity would be greater than those given in the English Tables. As probably other witnesses with special actuarial knowledge will be examined I will not enlarge on this aspect of the question. A return prepared for the Imperial Parliament (August, 1890) showed that there were 245,687 persons over 65 years of age in England and Wales who were in receipt of poor-law relief—out of an estimated total of 1,300,000 persons—nearly one in six of all classes, rich and poor alike. As the return was made during the summer at a period of specially prosperous trade, and did not include lunatics, vagrants, and some others, and only gave the number on a single day and not the number for the year, the total given is greatly below the actual number of paupers over 65 years of age. Another Parliamentary return gives the number of paupers over 60 years of age as 286,867, of whom 102,563 were men and 184,304 women. As the total population was 1,916,286, this return shows that one-seventh of the entire population of 60 was in receipt of poor-law relief, practically confirming the return previously quoted. The *London Times* says, "The poor seldom die in their own homes. In London one in five deaths occurs in a workhouse or public hospital. If we estimate those above the wage-earners the proportion will be something like one in three for all ages. If we take those of 60 years and upwards, one in two will more accurately represent the proportion." In New South Wales the 1891 Census showed that the indigent people of 65 years and upwards numbered 2,161; the total number of persons in the Colony of those ages was 28,365, so that it may be said that out of every 100 persons who reach 65 years 8 will enter the asylums of the destitute (*Wealth and Progress, Coghlan*). The Danish scheme which I have previously referred to practically abolishes the barrack system in favour of the plan proposed by Mr. Neild. A very good illustration as to which of the two systems is the more acceptable to the inmates themselves is that of the old Greenwich Hospital pensioners. When these old veterans were given the option of remaining in the old palace, which for so many years had served as their "Hospital," or to go to reside outside and take with them a pension less than the cost of their maintenance there, with scarcely an exception they elected to forsake the old associations and companionships for a corner in the humble cottage of some poor friend or relative. The results of the experiment in this Colony of the boarding-out of children and the cottage homes for aged married couples might offer some indication as to the probable effect of extending that plan to the aged inmates of our asylums and benevolent institutions.

*How wages would be influenced.*

Mr. Young, the English actuary, says:—

The employers will obviously seek to transfer a portion of their burden of enforced charges to the labourers' gains; hence, reduced wages with higher prices, all acting in combined power against the workman's impoverished condition. In our old poor-law history the taxes in aid of wages invariably meant a diminution of wages and a degradation of the position of the labourer.

The Special Report of the Commissioner of Labour (U.S.A.) on compulsory insurance quotes the following cases, showing that opinions are divided as to how wages will be affected by the employers having to contribute to the cost of the insurance of their workmen:—An agricultural labourer of 76, still able to work, is employed upon a noble's estate. As soon as his pension was secured his employer lowered his weekly wage 1 mark, which was 10 per cent. of his earnings, and adds "employers of all sorts are so pressed by competition that the temptation is great to lighten their expenses at any possible point," and "wages must be lessened to some extent, not only from what is actually paid out by the insured, but in some degree by the influence of that portion of the employer's contribution, which still has its traditional character as charity." Other employers of labour in country districts say:—"The attractions of the city are such that it is a constant fight to keep an adequate number of labourers upon the farms. Our labourers say to us impudently, 'You must pay our contributions under the old-age and invalidity law or we shall not stay.' This tendency is so strong and can be so easily controlled by the labourers in their own favour that it bids fair to become practically universal"; and some employers in towns say, "We find it pays us to keep our men and women in good humour not to make the subtraction, so we pay it ourselves."

*How Friendly Societies will be affected.*

The Hon. Joseph Chamberlain says:—

Unless something is done and done speedily, either in the shape of assistance from without or in the shape of new regulations made for the government of these societies, then it is perfectly certain that the embarrassment which is already beginning to be felt will become very serious—it will be very serious for the societies, and it will also be very serious for the nation.

And again: Their (Friendly Societies') embarrassments in the past have largely proceeded from the difficulty of dealing with superannuation and the impossibility of distinguishing after 65 years of age between the incapacity caused by ordinary sickness and that induced by advancing age. It would be a great advantage to the societies to disencumber them of old-age claims, or at least to assist them to meet them separately from their other obligations. (*National Review*, February, 1892).

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The Rev. J. Frome Wilkinson says:—

It is my firm conviction that Friendly Societies will have nothing to lose but everything to gain by the adoption of a universal free State endowment list.

R. P. Hardy, F.I.A., says:—

Upon the whole, so far as the mass of existing Friendly Societies go (excepting the affiliated orders, the Hearts of Oak and a few others), I consider that no sound, and in none a sufficient, provision exists for old-age relief in the sense now called for by public opinion.

The Rev. T. Fowle says:—

They (Friendly Societies) feel, and rightly so, that State-aided institutions for relief will, of course, provide a better investment for saving than they can do, and so, inasmuch as, like all businesses, they live by attracting new customers, they will perish from the effect of unfair competition. Hence their resistance to all State-aided schemes of pensions, a resistance which would alone justify the nation in rejecting them, even if there were no objection from the Poor Law authorities.

I hand in to the Committee a list of the Friendly Societies of New South Wales, giving particulars of each, which were taken from "Wealth and Progress" (Coghlan) [Appendix C] Co-operative and benefit building societies do not come within the scope of the scheme, therefore further reference need not be made to them.

139. *Mr. Schey.*] As far as you are aware, has any proposal ever been made for a State subsidy to Friendly Societies to enable them to make provision for old age on the part of their members? I have not heard of any such proposal. As to the financial position of Friendly Societies the same doubts are expressed here as in England. It is a fact that several of the local institutions are existing in a state of insolvency. In conclusion, I may be permitted to add that the cablegram published in this morning's (2nd July) papers (to which I have previously incidentally referred) states that a Commission of Experts has been appointed from the British Treasury to inquire if any practicable scheme can be devised for granting pensions to the aged poor, which shows that the work of the recent Imperial Parliamentary Committee is likely to evolve some rational means of providing for old age, and of dispensing with a large portion of the present unsatisfactory system of poor relief, or at least to bring the subject within the range of practical politics. In addition to not a few proposals emanating from foreign countries, no less than twelve have been placed before the British public, the details of which time will not allow me to enter into. Those, however, of Mr. Charles Booth (the statistician) and Mr. Hardy (the actuary) are the most popular proposals. The plan of the former is that every man and woman shall, without any previous contribution, upon attaining the age of 65, receive a pension of 5s. per week; and he estimates that the cost of this would be about £17,000,000 per annum, after making allowance for the savings effected by the consequent very great diminution of the existing form of in and out door poor-law relief. The scheme of Mr. Hardy in most points closely resembles that of Mr. Booth, the principal difference between them being that Mr. Hardy proposes to place a portion of the cost upon the local centres, instead of it being wholly borne by the State. After having studied the various schemes, it is my opinion that the adoption of some such proposal as is advocated by Messrs. Booth and Hardy would be the best solution of the question for this Colony, as the German law, with its coercive and ever-active interference with individual liberty, would not be acceptable to the citizens of a free country like New South Wales. The Danish plan, to my mind, is too limited in its operation, and is merely an extension of what in England would be called "outdoor relief," and the same remark applies to the scheme proposed by Mr. Neild. Any scheme benefiting one section of the community at the expense of another appears to me to be inequitable, and I think it would be preferable that the whole body of taxpayers should contribute towards the cost of a universal old-age pension scheme, so that any person upon attaining the stipulated age might demand as a right, and not *in forma pauperis*, an annuity for the last years of his life, and so be relieved of the stigma that pauperism casts upon the recipient of charitable doles. The cost of such a scheme would, of course, be very large, but not necessarily insurmountable. If a contributory scheme were adopted it would be found that the cost of administration, in a country where a million and a quarter people are scattered over an extensive territory, would, *pro rata*, far exceed that of even the partial scheme in operation in Germany, the cost of which, notwithstanding the very complete machinery at the disposal of the State, amounts to 1s. per head per annum. Where, however, the benefits to be conferred are so enormous the question of cost should not be the only lion in the path, although, I must admit, a most formidable one, and should a universal pension scheme for New South Wales be the outcome of the present inquiry a sunbeam of hope will have been caused to shine upon those who at present have nothing to look forward to beyond passing their declining years within the precincts of an asylum, or institution for the aged, or in the homes of relatives, where their absence would be more appreciated than their presence.

140. *Mr. Wilks.*] You mentioned that in the Danish scheme the pension given was higher in the towns than in the country—was that because of the greater cost of living? Yes; I think that must have been the reason.

141. They differentiate between the country and the towns? Yes.

142. What we have just had the pleasure of hearing is, especially as regards the earlier part, a collection of extracts from works on the subject? I consider that the opinions of the eminent men I have quoted are far above any opinion I could give. In addition to the information obtained from various sources, which it has taken some time and trouble to prepare, I have ventured to give some comments of my own which I thought might be of interest to the Committee. The first part, giving a description of the German system, is my own, except that the dates have been supplied from the books. Extracts are shown as quotations.

143. You consider that the German system would be impracticable in this country? Undoubtedly.

144. Your opinion is that the pension system should be applied to all or none? Yes. My opinion, as expressed at the end of the paper I have read, is that the scheme of Charles Booth is the most worthy of attention, as he is a man of eminent ability, who has made the subject a lifelong study. The only objection to his scheme is from the financial aspect. Otherwise it is very simple, the only process being that of paying out; there is no paying in connected with it.

145. *Chairman.*] But how would you propose to raise the money for paying out? First of all you would have to find out what it would cost. Then I think we should recognise that the Government is already paying a very large sum directly. It does not matter whether you pay these old people 5s. a week direct as a pension, or pay the money through the Government administration of the asylums. A rough estimate might be obtained of what the Treasury would have to pay for the first year by taking the total number

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G. H. Pitt. of people of 60 years of age and upwards, or 65 years and upwards, and calculating the amount at 5s. per head. But I considered that would be a schoolboy's way of arriving at the result, and I have left it to the Committee to ask people more competent to express an opinion on that subject than I am. It would entail special actuarial work.

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146. But it must be clear that 5s. would not suffice in Australia for an old-age pension? I think it would, because the weekly or monthly contribution in Germany is not supposed to support the pensioner wholly, and put him absolutely beyond want. On that point I would again draw attention to the German scheme, which, "with regard to the old-age pensions the amounts vary from £5 6s. 8d. to £9 11s. a year, and are not intended to provide sufficient means of support, but to supplement any other means possessed by the pensioner."

147. That scheme would hardly provide for the retirement of these people from active employment? I think it would. I was told by a gentleman the other day that at Liverpool he saw three little children who were each boarded out for 5s. a week, and they were very happy and comfortable. In the same way I think many persons would be only too glad to take some of these old people, though they might perhaps be a little more troublesome than children, for 5s. per week.

148. *Dr. Graham.*] Your work in the Government service is in the nature of actuarial work? Not at present. That is the reason why I have suggested that the Committee should obtain the services of the Registrar of Friendly Societies and Actuary to the Public Service Board.

149. Have you had any practical acquaintance with the working of asylums in the Colony? No, except that I have several times gone through them.

150. But you have not been attached to that Department in the course of your Government service? No.

151. *Mr. McLean.*] Have you been attached to any charitable institutions? No.

152. Have you any personal experience of the class of people likely to be relieved under a system of State pensions—I mean apart from statistical records? Do you mean simply as paupers?

153. Have you been brought in contact with that class of people so as to be able to form any estimate of their character and habits? Having a friend who was matron in one of these institutions, I have been several times in that asylum.

154. *Dr. Graham.*] Which institution? George-street Asylum, Parramatta.

155. Have you been to any of the Continental institutions? No.

156. *Chairman.*] Have you any knowledge of the American system of pensions to the army and navy who fought in the Civil war? No. The only thing I remember reading about it is that the pension scheme has been greatly abused.

157. Do you know the total cost of that scheme? No; but if you wish I will endeavour to find out.

WEDNESDAY, 8 JULY, 1896.

Present:—

MR. CHAPMAN,		MR. MCLEAN,
DR. GRAHAM,		MR. SCHEY,
MR. WILKS.		

E. W. O'SULLIVAN, ESQ., IN THE CHAIR.

Sir Arthur Renwick called in, sworn, and examined:—

Sir A. Renwick. 158. *Chairman.*] What positions do you occupy? President of the Sydney Hospital; President of the Benevolent Asylum of N.S.W.; President of the Deaf, Dumb, and Blind Institution; and President of the State Children's Relief Board.

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159. You have had a very long connection with charitable organisations in this country, and you have also had opportunities of observing the operations of such organisations in other countries? Yes.

160. Will you give the Committee the benefit of your advice, and also your opinion, as to the proposal before us with regard to State insurance or old-age pensions, and the general question of pauper relief?

With regard to my experiences in other countries they would only be similar to those of any intelligent visitor to those countries, more particularly in regard to the systems adopted in Great Britain and the United States of America, where I have been recently. Most of the information in connection with these two countries will be well understood by the Committee perhaps without my entering very fully into the subject. With reference, however, to the direct object of the Committee, I may state that, as far as I observed, with the exception of a pension system, so called, adopted in connection with sailors and soldiers in the United States, very little has been done in that country in the way of providing for the civil community in the direction now under consideration by this Committee. In England, however, I found that a considerable amount of discussion was taking place principally amongst persons engaged in public life. For instance, the Right. Hon. Mr. Chamberlain had taken action in connection with the Voluntary Committee of the House of Commons, a Committee which originated in consequence of dissatisfaction to some extent with the reports submitted by other Committees appointed by the House of Commons, and also, I think, by the House of Lords in connection with this subject. I also found when I was there that a number of public meetings had taken place in various parts of the country, and some occasionally took place when I was in London, at which lectures were given by gentlemen interested in the subject, including Canon Blackley and others. I also found, on examining a little more carefully into the matter, that there was a considerable literature on the subject, and that those who were interested in the management of charitable institutions in Great Britain, being wholly dissatisfied with the system in vogue, were thoroughly aroused to the necessity of making some new provision in this particular direction.

161. Will you give us your opinion as to the probability of the working of a system of State insurance or old-age pensions in New South Wales? I suggested some little time ago to a number of gentlemen who had some acquaintance with the charitable institutions of this Colony that it would be very desirable that we should take action in this matter in New South Wales, and I pointed out to them that no time was more opportune for the purpose than the present. The institutions in which our aged poor are housed are quite unsuited for the purpose. They have become old and dilapidated, and in some cases, to my certain knowledge, were never built for the purpose to which they are now applied. They are overcrowded, there is no system of classification, there is a separation of the sexes in old age, which is extremely undesirable, and none of those comforts which a civilised community should provide for its old people, and

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in many cases deserving old people, are to be obtained. There was an exception introduced by Sir Henry Parkes a few years ago when he established a few cottage homes for the purpose of providing for old couples, but this was only in a very limited degree. Taking all these matters into consideration, I asked the gentlemen to whom I have referred to meet me, and we formed a committee to bring this question under the attention more particularly of the public and the Legislature. The result was that a public meeting was held, and steps were taken to interest the community in the movement. A platform was drawn up, for a league "for providing pensions for old age," which contains nearly all that can be said in connection with this matter in a concise form. My object in writing it was not to be sensational, but to calmly and deliberately place this question before the public of New South Wales. The platform is as follows:—

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The question of a pension for the aged in the case of those who are unable to maintain themselves, and who thus require assistance, from the State or from some charitable source, is one that has been the subject of practical legislation in some countries, and is a matter of investigation and inquiry, with a view to the best possible solution, in others, at the present time. The conditions which surround this question are so diverse in different countries and amongst different peoples that the experience of the systems which have been adopted in European countries, for example, serves only as an object-lesson for us in New South Wales, where the circumstances surrounding the poorer classes needing this aid, and the habits and customs of the people generally, are so different from those in older lands. At the same time, it is true, that in view of the history of the administration of relief to the poor up to the present time in this country, the practical experience already obtained, and the very unsatisfactory condition of the present state of charitable aid, an opportunity now presents itself for dealing with this branch of the question, which demands the consideration of all those interested in charitable work. As a public question, it is of the highest importance in relation to our social economy.

*The necessity for a provision of this kind.*

That there is a necessity for a provision for the needs of the aged poor is only too apparent. In New South Wales at the present time there are no fewer than 3,358 old men and women in the various institutions; of these, 2,756 are men, and 602 are women. According to the evidence of the Director of Government Asylums, given in March, 1896, before the Parliamentary Works Committee, the buildings at Parramatta and Liverpool in which the old men are placed are thoroughly unfit for the purpose for which they are occupied. No system of classification is possible in consequence of the overcrowding, and no provision exists for the purpose of separating and classifying the inmates who are affected with various diseased conditions. In fact, to quote the words of the Director, "the sick and the sound are at present indiscriminately mixed together in the separate institutions without any chance of classifying them." When it is remembered that the circumstances thus briefly referred to entail residence together of about 500 persons, requiring regular medical treatment in consequence of their being affected with cancer, consumption, and ophthalmic disease; of about 1,000 persons affected with paralysis, rheumatism, epilepsy, heart-disease, senile decay, and the like, who do not usually require much medical treatment beyond tonics, stock medicines, and special diet; and of 1,000 who are simply old and destitute, together with about 500 who may be reckoned as casuals,—it must be admitted that a state of things exists which, in the name of our common humanity, requires immediate remedy. So greatly are the officials dealing with these matters impressed with the need of a remedy that a proposal was recently submitted to the Parliamentary Works Committee to accommodate the whole of the inmates of the various asylums at Rookwood at a large expense to the State—a proposal which happily has been rejected.

Independently of the poor aged persons who have been compelled to seek the inadequate refuge of the Government asylums, there are many persons needing aid in the form of a small pension who would not under any circumstances accept the hospitality of the asylum, but who must necessarily drift deeper and deeper into poverty if not afforded the aid of the pension. The Benevolent Society of New South Wales and other similar institutions do noble work in this direction, and their records present lamentable instances of cases of aged poor men and women who, generally through no fault of their own, have to seek the allowances furnished by them.

At present the practice is to separate old married couples before admission to the asylums, an unnatural practice which the establishment of a pension system would avoid.

*The aim and object of this League.*

At the present stage the Old-Age Pensions League considers it proper to define the objects it has in view. And, in the first place, it may be well to state that having before it the proposals made in other countries, and the history of the movement elsewhere, the League does not propose to submit for consideration any scheme to promote a sick fund in connection with old-age pensions, nor to interfere in any way with the already well-established provisions made by the various Friendly Societies, or by any employers' aid fund. Nor does the League aim at making definite proposals for the solution of the great problem of old-age poverty by some universal scheme based on compulsory or voluntary contributions, or on a direct subvention from the State. The League does not at present propose to put forward any scheme to encourage those who are willing and have the means to invest in deferred annuities, secured by State subventions or guarantees.

All these and similar proposals the League considers to be subjects for inquiry and investigation, and it is believed that the course at present about to be adopted in the mother country should be followed in New South Wales. The object of the League in connection with the various plans proposed for the provision of old-age pensions will be to obtain the consent of the Government to the appointment of a Royal Commission, or some similar body, for the purpose of dealing with the question in all its various details.

To afford relief to the overcrowded state of the Government Asylums, in which the aged poor are now housed, and to assist those who need aid, but who will not avail themselves of the institutions, the League proposes to urge on the Government a temporary and tentative scheme which could be adopted at once. Of the classes of inmates of the institution already referred to a very large proportion could be pensioned, so that they might live among their friends and relatives or other suitable persons, the League believes, at a cost to the State not exceeding that already paid for their maintenance in the asylums. Similar small pensions should be paid after investigation of the circumstances of each case by a proper official, to those in special need outside the asylums. To effect these purposes the present official staff of the Public Charities Department, this League believes, would be sufficient. The Director of Public Asylums (in whose statement before the Parliamentary Works Committee there is ample evidence of his sympathy and approval of this provision) might be asked to report as to the best, most effective, and most speedy mode of carrying out these suggestions for the relief of many deserving poor old men and women.

The State has already made provision for destitute children in the way of boarding out, and in the provision of cottage homes, with family life for invalid children, and it has also satisfactorily introduced to a limited extent the system of cottage life for old couples.

The League believes that the purpose it has in view will meet with the support of the people of New South Wales. They consist, in a word, in an attempt to obtain for those who are subject only to senility and poverty the advantages which the State has already provided for its unfortunate young waifs and strays, and the removal of the discreditable circumstances which at present surround the aged poor now housed in the asylums.

The League recognises fully that any attempt to discourage the principle of thrift and personal effort should be discontinued, and in the objects of their association now briefly stated this cardinal principle is not in any way interfered with.

I may state that since the appointment of this Committee the League has determined to rest and see what the result of the labours of the Committee will be. We are desirous as a League to do everything that we possibly can to assist the Committee, and any members of the League whose evidence would be of value will be only too glad to render what assistance they can in this matter.

162. You are President of the League, are you not? Yes.

163. As far as I can gather, your League does not make a definite proposal, but is simply now investigating the question? We are merely trying to educate public opinion on this subject, We are about to circulate

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circulate pamphlets and slips of paper amongst persons to whom such information would be useful to enable them to form an opinion upon this matter. As far as we ourselves are concerned we have no doubt whatever about it.

164. Did you note in this morning's telegrams the information that the New Zealand Government are about to bring in a scheme? Yes, I saw that; and I also saw a cabled report from England to the effect that they are taking active steps there. I expected nothing else from what I knew of the energy of the present Colonial Secretary.

165. In Great Britain they appear to have appointed Treasury officials to do the work? That is for the purpose of determining the amounts, and what public expenditure would be involved in the establishment of a system of the kind—actuarial work, chiefly.

166. The Committee would like some information from you in regard to the way in which they work the charitable organisations in the United States? In the United States every State has its own system. I shall be very glad to leave, for the perusal of the Committee, a work from which I think they will be able to obtain all the information necessary as regards the United States. It is by Professor Amos G. Warner, and is entitled "American Charities: A Study in Philanthropy and Economics."

167. From your own observation, what do you think of the American system of working the charitable organisations? I think it runs pretty much on the same lines, with a good deal more enlightenment, as the English system. In fact, I am sure the Americans have borrowed their system from the English system. There is nothing much to be gained in the direction of State-aid pensions from them.

168. *Mr. McLean.*] From your experience in connection with the benevolent asylums here, can you say whether the relief is given in most cases to aged people, or do you find the claims for relief come as much from younger people who are incapacitated from work or unsuccessful in obtaining employment? The larger proportion of persons assisted at the asylums consists of widows, deserted women, and aged persons.

169. *Mr. Wilks.*] Do I understand from the information you have given so far that you are strongly opposed to the present asylum system in this country? No; and it is as well that this should be clearly understood. In my opinion, we can never totally dispense with the asylum system. Such a thing would be altogether out of the question. Those who believe that the asylum system can be done away with are labouring under a mistake. There are numberless cases for which it is absolutely necessary to have an asylum. For instance, old men who are dissipated in character, whom no one would take in as lodgers, and who are really unfit to mix in civil society, must be provided for in some way. Then there are old chronics of different kinds; they must be provided for, and they can only be provided for adequately in a home under control.

170. Are you acquainted with the working of the system introduced by Sir Henry Parkes of which you spoke just now? The practical details are not known to me, but I know something of its working from having seen it, also from reports that are brought to me about it, and from consultations in connection with its working, and so on. I am quite sure that if it were properly carried out it would be a very good system indeed. It runs on the lines adopted in England in connection with a number of private charities, such as the Freemasons, the Guild Homes, and so on. Of course, here it is under the control of the Government.

171. I think the Masonic body have a few homes, have they not? I do not know whether they have any homes of that kind, but I know they have wards at the Carrington Hospital for convalescents.

172. *Chairman.*] Did you take any interest in the English charitable organisations when you were in Great Britain? When in London I had an opportunity of consulting with many of the persons connected with the various charities, some of whom were also members of the London County Council, and as a result of the conferences I had with them, I embodied my views on the question of boarding out children in a letter covering several columns to the *Times* newspaper, which led to some subsequent correspondence on the matter. In this letter I pointed out that although the system of boarding out children had been established for a longer time in England than in New South Wales, yet in this Colony we had carried it to a more perfect degree, and with far better results, than was the case in England. I am still in correspondence with some of those who are deeply interested in this particular form of charity.

173. Do you think it is possible to apply the boarding-out system to a large number of old people? I fear that in the case of old persons it can only be done in a limited degree. Old persons have not the attraction that children have. They are more troublesome to manage, and more difficult to keep under domestic control. For these reasons the results would not be so satisfactory as in the case of children. But with a limited number, I believe the plan could be adopted. With a much larger number, I believe that if they were assisted by a pension either their friends or relations, or some persons with whom they were intimate, would be only too glad to receive them.

174. And you think it would be more conducive to the happiness and comfort of these old people to be boarded out with their friends, and even with strangers, than to be kept in an asylum? I cannot conceive of any more miserable life than for a poor old man to be separated from his wife and everything dear to him, and to be placed in one of the wretched barrack institutions we have in this Colony at the present time. No life, in my humble judgment, could be more intolerable than that. The very fact of giving liberty to a man, whether he be young or old, makes all the difference in regard to the happiness he may acquire otherwise.

175. The sum of 5s. per week appears to be sufficient in the case of children to be paid to persons willing, and even anxious, to take them for that payment, but do you think it would be sufficient in the case of grown-up people? It depends, to a large extent, upon the character of the people who take them in. In the case of benevolently-disposed people the 5s. would be a perfect Godsend, because it would help to pay the rent. The rent is the great difficulty in these cases, as far as my experience goes. People who might be charitably disposed towards these old men might not be charitably disposed when their rent had accumulated from week to week. The rent money is the great bugbear in the case of all these people, who would, in all probability, be asked to take charge of these old men.

176. If families in the country districts could obtain two or three of these old men it would be a material assistance to them, I suppose? Undoubtedly it would, and also to families in some of the suburbs of the city. As far as my experience goes in connection with the Benevolent Asylum, when you assist persons to pay their house rent you at once succeed in removing a most important disturbing element in the family life.

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177. Then, I presume, what you would suggest would be that a selection should be made of the best patients, physically and mentally, for the purpose of making an experiment? Quite so. My idea is that it would be rash, indeed, to attempt for one moment to take all these people and board them out. Such a thing could not be carried out in practice. But there is a large proportion of these old men, and also of the old women at Newington, who could certainly be placed with friends of former days who would only be too glad to take them if they could get 5s. a week with them. Speaking roughly, I think it would be a low estimate to say that about a fourth of the inmates of Newington might be taken in that way from the institution. In regard to the others, from the statement I have made it will be seen that there must be some hundreds who could be placed out in this particular manner.

178. Do you consider that the German system—that is, compulsory State insurance or old-age pension scheme—could be carried out in a British community? I am quite sure that it could not be carried out in our community. In Germany it is not carried out with satisfactory results. There are really only two schemes that could be adopted. One is to pay for these aged people, as they make their claims, from the Consolidated Revenue, through the Charities Vote, and the other is to attempt, in some way or other, to get these people to pay compulsorily, and then to give them an opportunity afterwards of deriving benefit from their payments. I am afraid that the latter scheme could scarcely be carried into effect in this country. We are such an unsettled population, while in Germany they have every possible means of watching their people and keeping them under control, and they have an admirably-constructed State system of officialism. Where the scheme has been unsuccessful in Germany, I am sure it would be even much more so amongst our population. Besides, I have always considered that it is the duty of the State itself to look after the aged poor, except where people have placed themselves out of the bounds of obtaining this relief.

179. Do you think it would be possible to work any old-aged pension scheme in connection with our insurance societies, or even with the Friendly Societies? With regard to the insurance societies, I received a communication from the Citizens' Life Insurance Society in which they gave certain tables they had drawn up, and certain proposals they made in connection with this very matter; but it strikes me that there would be very great difficulty in connection with these very old people to get even these payments made. The class of people who are in our charitable institutions are quite outside the range of either Friendly Societies or life insurance societies, and it is for that class, and that class alone, I imagine that the State would make provision.

180. *Mr. Wilks.*] The tables to which you refer were sent round generally? I received a copy of them, and I looked into them carefully, and the defect, to my mind, was that the people were expected to pay something, and these old people are utterly unable to pay for their own maintenance.

181. *Chairman.*] Putting aside the inmates of the asylums, do you think it would be possible in any shape or form, either in a compulsory, voluntary, or semi-voluntary way, to work out an old-age pension scheme for the people of New South Wales? I doubt it very much. The French tried it. They have tried it over and over again ever since the days of the Revolution, and it has always turned out a failure. They introduced a system of allowing these people to pay small sums of money upon which they received interest, so that they might be provided for in their old age. That has turned out a failure. In this Colony we have an unsettled population, especially as regards the class with whom we are now dealing, and I am very doubtful as to whether the result would be satisfactory.

182. *Dr. Graham.*] Some of the advocates of an old-age pension scheme hope that the scheme once introduced would eventually take the place of our present system of charity by dole;—do you share that opinion? No. I have explained to the Committee already that this scheme is to touch a certain class, and that it can only touch a certain class, and that it would be impossible to wipe out our poor-houses, which must be provided for the particular class to whom I have referred.

183. It would touch a very small class of the present inmates of our asylums? It would touch a larger class than you would imagine, for this reason: I understand it is the intention, and it is a thing that must be carried out ultimately, to put the consumptive inmates in a certain place, the cancer inmates in another place, to provide for ophthalmic diseases, and so on. If that is all done there will be a balance of only about 2,000 persons left. Of these 2,000 persons, 500 may be considered as casuals. The other 1,500 are persons who can be worked out by a system of old-age pensions.

184. Dividing them as you have done, Mr. Maxted gives only 500 persons out of the 3,500 in the asylums who are eligible for such a scheme? He is an official, and, of course, he looks at it from an official standpoint. I am looking at it from a general standpoint, which is quite a different thing. No one has more respect than I have for Mr. Maxted, and I know the value of his opinion; but it must be remembered that an official who is dealing with these matters does not look at them in exactly the same way as a person outside of officialism would do. My impression is that it will be found that a great many more than 500 casuals can be placed out. During the few visits I have made to these charitable institutions I have seen a great number of men, who, I am certain, could easily be placed out; and with regard to the women, I have already said that I am sure one-fourth of the inmates of Newington could, at 5s. per week, be placed out amongst their relatives, or, at any rate, amongst old acquaintances.

185. Would not the introduction of a general scheme of old-age pensions increase the class that would apply to the Government for relief? The same argument was used in regard to boarding out State children. As soon as the Government took that matter up, and it was understood that instead of being placed in barracks the children would be put where their parents could see them whenever they liked, it was said that there would be a vast increase in the number. The result, however, has been the reverse. Allowing for the circumstances of the Colony, and for the increase of population, the number of children now boarded out is not greater than naturally would be expected.

186. You are aware that the Commissioners of Charity in Great Britain have stated that the effect of a system of out-door relief, loosely carried out, has been to enormously increase the number of applicants for charity? That is the result. But it must be remembered that in the case of the class of persons with whom the Commissioners had to deal, and who are to a large extent affected by the hereditary taint of pauperism, there would naturally be an increase in the number of such persons applying for out-door relief.

187. Do you think that the number of people at present in our Government Asylums, who are dependent wholly on Government aid, adequately expresses the number of destitute poor in this Colony? No.

188. Is there any way of ascertaining a reasonable estimate of their number? A rough idea might be obtained by getting the authenticated statements from the Benevolent Asylum, from the St. Vincent de Paul

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Paul Society, and one or two other societies of that kind. I should place very little reliance, however, on any of the little associations that have sprung up within the last few years, because I am very much afraid they are leading to a duplication of charitable effort, which ought to be better arranged in the interests of charitable relief. My own idea has always been that it would be well if such a society as the Benevolent Society were to establish branches under the control of the ladies who are now forming these little district associations, so that the whole thing could be properly supervised and carried out by one large body, instead of being distributed and reduplicated as at present.

189. I asked the Chief Compiler of Statistics this question, "Do you think that the forms provided in this Colony with regard to poor returns are satisfactory?" His reply was, "No; an immense amount of zeal is necessary on the part of any one endeavouring to compile that portion of the statistics relating to our charities." Do you think anything could be done in the way of legislation to initiate a system for procuring these returns on a satisfactory basis, because it is obvious that before we could recommend any system of old-age pensions for this Colony we should have to know the extent to which poverty has actually existed;—is not that a reasonable proposition? I do not attach the same importance to statistical results as you do, for this reason: When we started the State Children's Relief Department we did not know how many children would come under our care. We knew how many were in our institutions, but we did not know how many there were outside who would require assistance. I am quite sure it would be the same in this particular matter. Whatever statistical returns you obtained they would never be complete. There are numberless cases known personally to me where people will never confess their poverty, but are only too glad to receive a little assistance. For those two reasons I think it would be almost impossible to obtain accurate statistics in a matter of this kind.

190. Do you think you could reasonably apply your experience in dealing with State children to the case of aged people? I think so, but of course in a different degree. I have already pointed out that I am quite sure the proportion of old persons who could be boarded out with their friends and relations would be very much smaller, and the persons themselves would be very much more difficult to manage. In this view of the matter there are difficulties such as do not exist in the case of children.

191. *Mr. Wilks.*] You said just now that there were some people who from motives of delicacy did not like to confess that they were in a state of destitution;—how would you arrange to deal with such persons under a system of pensions? They would have to make an application. Suppose you had a branch of the Charities Department devoted to this particular matter—as would necessarily be the case—some of the friends of these persons, or perhaps their clergyman, would know all about them, and they would apply to the department where they would not apply to a benevolent asylum.

192. They would do it surreptitiously? Yes; they would think it more respectable. That would be the sort of feeling they would have.

193. *Mr. McLean.*] Do you not think that in itself would lead to a very much larger number of claims being made upon the State? I am afraid that at first it would, and under the present peculiar circumstances of the Colony there are sure to be a large number of people of that class. I have had at least thirty letters within the last three months from persons setting out the very circumstances to which the Committee are now referring, and stating how glad they would be to receive a small pension if possible. There was one letter in which the writer begged I would go on with this matter, but not close up the charities, because there were many persons like herself who might require charitable aid, and who had no friends to whom they could possibly apply. That shows the general trend of the matter. There is no doubt whatever that provision must be made in the shape of an asylum. My impression is that by the system of outdoor relief the number of persons requiring asylum aid would in time be considerably reduced.

194. *Dr. Graham.*] Are you in favour of isolating the people at present in the asylums who are ill from the general pauper inmates? Certainly; separating them.

195. In the English system of housing the poor they put the chronically ill who are destitute along with the others? That is done in some institutions. But if you read the later reports published in the *British Medical Journal*, you will find that in many instances at the present time they not only have hospital wards, but they have infirmary wards for that class of cases. But what I especially aim at, and in which I am sure I will have the sympathy of the Committee, is this:—At the present time in our asylums the 3,000 odd people are all mixed up together. There is a cancer case beside a scrofulous case, an ophthalmic case between them and a healthy poor old man lying in the next bed—a most discreditable and disgraceful state of things.

196. Then you think some change is wanted? I have not the remotest doubt on the subject. The evidence of officials who deal with these matters, and which I have heard with my own ears, not to speak of what I have seen with my own eyes, is sufficient to show me that in the absence of a system of classification, no good can be done to the sick, and a great deal of harm can be done to the healthy. Let anyone go to Newington, which is perhaps one of the best managed of these institutions, and what will he find? He will find a certain class of patients separated and pretty well treated; but the great majority of these old women are so mixed up together that you will find an old harridan of the very worst character sitting beside some poor old person who has been respectably brought up. Then near them you will find a consumptive case—a poor old woman with chronic bronchitis, or something of that kind; and further on a cancer case, and so on. There is an utter absence of classification which is discreditable.

197. *Chairman.*] Have the superintendents or managers of these asylums no power to make a classification? They do the best they can, but the space at their disposal is very limited. I do not blame the authorities in connection with the matter. I blame the country for not doing its duty in regard to it.

198. *Dr. Graham.*] I suppose no one gets any form of relief from the Benevolent Asylum who may possess a small sum of money? Not if it is known. Cases of imposition of that kind have occurred, but when they are found out the people are struck off the list.

199. Do you not think it is a hardship that where, say, a domestic servant who has worked hard for many years, and being a thrifty and decent woman has saved £50 or £60, that she should not be eligible for any kind of relief until she has spent that money? Yes; very likely under the new proposals you are going to make you will make provisions for a case of that kind. But at the Benevolent Asylum the object is not to provide for the persons in full, but only to assist in such a way that the people may possibly, by their own efforts, be able in time to do without such assistance.

200. Do you not think that the fact that in England the old-age pension scheme and all the schemes suggested have been found to be impracticable in the opinion of experts is a good proof that we should be very careful before we initiated any such scheme here? There is no doubt care is required, and I suppose that is the reason why this Committee has been appointed. But the point is this, that in England nothing of a practical character has been done; the report of the Committee of the House of Commons was to the effect that they should wait for further information. In New Zealand they have taken the bull by the horns and introduced a Bill at once. I may mention also that a Bill has been introduced into the House of Commons by a private member—I think Sir John Lubbock.
201. *Mr. Wilks.*] I suppose you have noticed that the overlapping of charitable organisations in this country has been detrimental by reason of the duplication of machinery, each separate organisation requiring a secretary and so on? Yes, that is one defect; but what I considered infinitely worse is this, that a person gets more in his poverty than he could earn depending upon himself.
202. Then the effect is to offer a premium to persons to profess poverty? Certainly.
203. *Dr. Graham.*] Do you not think it would be a much more economical plan if the contributions by the State for charitable purposes were given through one fixed channel? As it is now they are given through different channels—they are given through the Colonial Secretary's office, in some cases through the Treasury, and through other channels;—do you not think there ought to be some kind of Board? I think it ought to be under one department, undoubtedly. Our object should be first of all to avoid, if we possibly can, the institution of any poor law in this country. The second object should be to get as much voluntary aid in the management of our charities as possible; in the third place to provide a complete system of inspection; and in the fourth place to have all the charitable assistance brought under one control as far as possible, so that there should be no overlapping. Those are the most important points, though of course I could elaborate them. For example, I am perfectly satisfied that if the State Children's Relief Department, or any other great charity that I know of, were not managed by voluntary efforts, the cost to the country would be a great deal more than it is at the present time, and what I consider to be the curse of all charity would be introduced—that is, officialism. That is the curse of all charity the wide world over. However good a man may be, and however benevolent, when he first commences as an official he gradually gets into a routine and treats the cases just as a matter of business, and not in that spirit of pure philanthropy by which he was originally actuated. That is a thing I have observed over and over again in the course of my experience, and it is a thing that ought, as far as possible, to be discountenanced.
204. *Chairman.*] I suppose the official becomes a mere machine, and has no strong sympathy with the sufferers? He has sympathy, but it is so frequently called upon that it gets exhausted in course of time—it wears out.
205. *Mr. Wilks.*] Do you not think, on the other hand, that the voluntary management in connection with some of the local benevolent societies has the effect practically of encouraging destitution;—do they not fossick it out and encourage it? I have noticed that too, but I say there should be a proper system of inspection. Inspection is a cardinal principle in connection with all charities.
206. *Dr. Graham.*] Do you not think that the sentiment of repugnance to the term “pauper” has been more or less a safeguard against abuse? I have not the slightest doubt about it. We have had experience of that in an institution very near to this building. At one time we had placed upon our dispensary cards something about paupers or something like that. There was a long discussion by the Board about how unfeeling it was, and the words were removed. Then we had an increase in the number of applicants. This was some years ago when Sir Edward Deas-Thomson was President of the Sydney Hospital. Then the words were replaced again with a corresponding effect. The idea attaching to the term “pauper” has undoubtedly a deterrent effect; but whether it is or is not a wise thing to use it is another question altogether.
207. The number of paupers in this Colony is stated to be much larger than the number in the other colonies, the figures being respectively 4·30 for New South Wales, 2·89 for Victoria, and 2·34 for Queensland per thousand of the adult population;—do you think the system of looking after our poor is more liberal than in the other colonies; and, if so, do you think that accounts for the larger number of paupers? There are two reasons. The first is that nearly all the other colonies have Acts in force prohibiting the importation of poor persons without relations or others to take care of them. In the second place, there is no doubt we are a much more liberal community, and have not the same class of inspection that they have elsewhere in connection with our charities. There is no doubt that we have to bear the burden of a good deal of the pauperism or poverty of the other colonies; because, although the statistics may show a small number of paupers from the other colonies—I do not know whether they do or not—it should be borne in mind that people, after they have been here a short time, regard themselves as belonging to the place, and do not state that they are Victorians or New Zealanders.
208. I notice that the expense per head for maintaining these poor people is much higher here than in the other colonies. Mr. Maxted explains that by the fact that we house our chronically ill with the ordinary yard patient;—do you think that is a sufficient explanation? It explains it to a great extent; but in regard to some of our charities I know that our expenses are lower.
209. *Mr. Wilks.*] Have you considered the question of the age that it would be desirable to fix for the operation of a system of pensions in this country? Yes.
210. What age would you suggest? Between 60 and 65—any age above 60. I think there ought to be some arrangement by which a report should be made on the class of cases in which relief was applied for. For instance, I have seen persons of 70 years of age whom you would think were not 60 years of age, and *vice versa*.
211. *Dr. Graham.*] Still the difference in the number of people destitute at 60 and the number destitute at 65 is very great? It is great.
212. So that we should have to fix the age definitely. It makes a great deal of difference as far as the cost of the system goes? Yes; but I should like to point out that the total number is not very large.
213. Still, the average age of those in our asylums now is 63 years? Yes.
214. And we have 3,600 of those? Yes. I should prefer to begin at 60. If a man at 60 years of age is in such a position that he needs this assistance, I think I would give it to him. I should think 60 would be a proper age to begin at.
215. Do you think if such a system were initiated it could be worked through such an organisation as the

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Benevolent Society? No. I think it ought to be a Government institution, for this reason, I think inspection is imperative—there must be a continual control. Voluntary effort is very excellent in its way, but voluntary effort alone would not be adequate. I speak from my experience in connection with the State Children's Relief Department. In connection with that institution we have voluntary lady visitors all over the country, and we have also a voluntary Board; but without the assistance of the paid inspectors, who must necessarily do a certain duty, and who must necessarily carry out instructions, I am afraid the system would not work so well; and I am sure any arguments of that kind would have far greater force in the case of old people.

216. Would not the fact of having the system entirely under the control of a Government department give it more the character of a poor-law organisation? I do not say it should be entirely under the Government control. I say it ought to be a Government institution. If I were permitted to make a suggestion to the Committee, I would put it in this way. That a plan similar to that in connection with the State Children's Relief Department should be adopted. The Crown appoints a certain number of members as a Board, and places under them an officer of the Crown having distinctive duties, and so on. You would then get over all this difficulty. No one feels any shame in placing a child or children under the State Children's Relief Department. It is not regarded in the same light as placing them in a benevolent asylum. If you had a similar Board in connection with old-age pensions it would lead to the same result in regard to the matter of feeling. But there should be a deterrent effect also, and that precautionary measure should be adopted by making the Chief Inspector of Charities the principal officer in connection with the carrying out of the scheme.

217. In regard to the State Children's Relief Department, have you got agencies all over the Colony? Yes.

218. And are they all voluntary workers? Yes.

219. And do you find that works well? Yes. We can find out whether or not it works well, very easily, from the reports that are sent in—by comparing the report sent in, first, with the report of the school-teacher, the parish priest, or the clergyman, and also the inspector's report. All those four reports are furnished in regard to these homes. Then they are compared together. If there is any laxity on the part of a voluntary visitor, attention is called to the fact at once, by a letter, and then greater care is taken; or perhaps the lady may resign, and we may get someone else who will pay more attention to the work.

220. You have read the ordinary schemes—Canon Blackley's, Mr. Price Hardy's, and so on;—do you think any of these schemes would be applicable to this Colony? No; I do not believe in them at all—not for this Colony.

THURSDAY, 9 JULY, 1896.

Present:—  
Dr. GRAHAM,  
Mr. McLEAN,  
Mr. O'REILLY,  
Mr. SCHEY,  
Mr. WILKS.

E. W. O'SULLIVAN, Esq., IN THE CHAIR.

Mr. Edmund Walcott Fosbery called in, sworn, and examined:—

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221. *Chairman.*] What are you? Inspector-General of Police.

222. We would like your opinion upon a proposal for State insurance and old-age pensions, and also with regard to the best method of arriving at a system of pauper relief. Will you kindly give the Committee the benefit of your advice on these points? Your question would require rather a long answer as regards the administration of State relief. We start, of course, with the assumption that the State undertakes the responsibility of providing for the infirm, destitute, and aged, and the question, therefore, resolves itself chiefly into one of administration. A bad system well administered would be preferable to a good system indifferently administered; so that the question of relief to the aged and destitute would resolve itself, as I say, chiefly into a question of discriminate and fair appropriation of the dole of the State. For my part I think that the practice of associating all the worn-out paupers in barrack life is a bad one. It must be in operation to a considerable extent, because some of the inmates require constant attention and medical aid, and from their habits they would be unfit to be allowed at large. But there is a very large class of deserving people who from no fault of their own have drifted in old age into a position of utter helplessness. Not from any want of prudence or industry, or from dissipated habits, but just from the ordinary misfortunes that fall upon humanity they find themselves in their old age stranded; and it must be a cruel thing that their self-respect should be destroyed by their being separated, if man and wife, in order to herd with a large number of unfortunates, some of whom are of depraved character. Therefore if some means could be found whereby they could be assisted by the State to live in decent privacy it must be obvious that it would not only be to their advantage, but that it would be just. If they could be allowed, on the payment of a small sum by the State, to live either with friends or people whom they did not know of respectable character, who resided in the country, it would be manifestly to their advantage. The mere presence of a man, however old, about the premises would be some sort of protection to the homestead when the bread-winner was absent; in addition to which, however old and feeble a man or woman may be, they can always perform many little domestic offices and other labour about the home which would indeed almost pay for their keep, and if there was a small honorarium given to the people charged with the care of these old folks it would not cost more than it does to herd them together in asylums.

223. *Mr. O'Reilly.*] Would you define a small honorarium? I think about £15 a year, that being the average cost for the maintenance of a pauper. In a system of this kind the administration is everything. It should be so conducted as to prevent unworthy people, who are the victims of intemperance, dissipation, or unthrift, from becoming pensioners upon the State, as, counting upon such relief, would, perhaps, be an incentive to many to avoid the necessity of making provision for themselves.

224. *Chairman.*] From your long experience in the various positions you have filled, you have come a good deal in touch with human nature;—do you think it possible that we could work in this community a compulsory system of State insurance, or old-age pensions, such as that now upon its trial in Germany and Denmark? I consider that it would be wholly impossible in this Colony, simply from the fact that the class

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class whom you desire to assist are almost all of them of a migratory character. Even when they are apparently settled they are constantly breaking up their homes, and shifting from one place to another. If you traced the great majority of the paupers who are now receiving State aid you would find that they had been waifs and strays in the community for years past, counting no doubt upon the fact that when their means of subsistence failed they would be well cared for by the Government. This, of course, is a drawback to any system. Indeed, I may say that in numberless cases where men have disregarded their obligations to their wives and their children, they have said, "Oh, when I go away, if I desert them, my children will be better cared for by the Government than ever I could hope to look after them." Therefore, it would not do to offer too great facilities to people to neglect the responsibilities of life.

225. Have you noted the proposal of the New Zealand Government now before the Parliament of that country? I just saw it mentioned that they proposed to give every one above the age of 65 years a pension of £26 a year.

226. Do you think it would be possible to work such a scheme in New South Wales? I do not think it would be just. I do not think that all people, indifferently, should be provided for in that way at 65 years of age. Many a man at 65 years of age is in a very good condition to work. In addition to that I do not think that the hand should be open to provide for people who systematically live upon their fellow-members of the community. I should only make provision in the case of deserving persons. The others I do not feel so much interest in; I do not care how they are provided for, or how coarse their food is, as long as they are kept alive.

227. *Mr. O'Reilly.*] I think we may gather from your remarks so far that you regard favourably a proposal to board out a certain percentage of our aged poor? Undoubtedly.

228. And you suggest in connection with that scheme that the maximum payment should be £15 per annum, or about 5s. a week? Five shillings a week is £13 a year; I should go a little higher than that. I should make it about £15 a year. I do not think 1s. a day would be exorbitant, and that would be £18 a year.

229. You propose that that £18 per annum should be paid to the owner of the house into which the old man went? Certainly. The old man, or the old woman, would be, as it were, boarded out to these residents.

230. Would you propose that the householder should have any authority over that old man or woman? That would be unnecessary. Discipline would be well enough maintained by the fact that if the inmate did not behave himself properly his license to live there would be cancelled, and he would lose the advantages of the place. You would have no difficulty with that. The chief difficulty with these old people in the asylums, or anywhere else, is that they are constantly wanting to get abroad into the street to induce the open-handed people to give them drink.

231. Do you not think that the inevitable restlessness of old age would interfere with this proposed boarding-out scheme? I do not think so if the old people were stationed a reasonable distance, say 2 or 3 miles, from any town or public house. Old age is not apt to become so restless that under such circumstances they would not settle quietly down in their homes.

232. But I thought you alluded to this particular class whom we propose to assist as a migratory class? I look on the great majority of them as rather undeserving people after all, because they have not only made no attempt to provide for their old age, but they have not behaved themselves decently when they were wage-earners. For instance, I make no excuse for a shearer who earns £30 and takes thirty sovereigns to a public-house and knocks it down in three days. He is unworthy of anybody's sympathy. The days when such things were done, however, are fortunately passing away.

233. So that although in some cases this boarding-out system might apply, you do not consider that it would in any way solve our present difficulty in connection with the asylums? No, I do not, except that it would decrease, to a great extent, the necessity for large buildings being erected in addition to those we have at present. I do not believe in palatial premises being erected for the aged poor. I think they would be just as happy in buildings that were a little less pretentious.

234. *Chairman.*] You have had a considerable acquaintance with the charitable organisations of this country? Yes, some of them.

235. And I think you are at present the recipient of donations from well-to-do people for the purpose of helping deserving cases? Yes. There is a society, of which I was one of the founders, and of which I am chairman, for relieving cases of acute distress.

236. Do you find such cases to be numerous? Yes, very numerous. Times are very bad just now.

237. And these funds are devoted by private individuals without any regard to sect or class? Undoubtedly. Such consideration never enters into the matter.

238. As a matter of fact, you do relieve many of the genteel poor, do you not? The most deserving people are very often those who make the least clamour. They will sell every stick of furniture that they have accumulated for years, and almost every article of clothing, before they will ask for charity. Those are the kind of people whom I say it seems cruel to thrust into an asylum to herd with hundreds of paupers.

239. In cases like those to which you refer, would it not be a desirable thing to give them some weekly relief, so that they might live either with their friends or with some other reliable persons? The way my committee deals with them is this: We only attempt to assist in acute cases, where people have fallen into misfortune by sickness. For instance, the bread-winner may have broken his leg by a fall from a ladder, and the wife may be near her confinement. If the butcher, the baker, and the landlord are paid while the husband is in the hospital and until the wife has got over her sickness, they are then put on their feet again to make a fresh start. But if the man were dying of consumption, or in failing health, and might live, perhaps, for ten years growing worse every day, the distress would then become chronic, and I should be obliged to pass him on to the Benevolent Asylum for relief. In such cases the Benevolent Society frequently pay the rent and give a small allowance of money. I do not approve of all classes, irrespective of their antecedents, being thrust together into an asylum. That is the point I wish to emphasise.

240. With regard to the scheme of compulsory State insurance or old-age pensions, do you think it would work in a British community? I do not think so. I do not think that the members of the community themselves, even if you gave them ten times the advantages of their contributions, would like to be compelled to make any payments of the sort.

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241. I suppose you hear of some very distressing cases in the country districts as well as in the city and suburbs? Yes. But I do not think there is a country in the whole world where a case of acute misfortune or distress is dealt with with the same liberal hand that it is in New South Wales. You can tell by the questions that are asked in Parliament sometimes concerning persons in distressed circumstances suffering from sickness. Only yesterday I sent a trained nurse to a case, and ordered all necessary comforts to be provided, and a doctor to attend, and the only claim for the relief was that arising from misery, distress, and sickness. Of course that may lead, and does lead, no doubt, to a great number of unscrupulous people taking advantage of the State instead of being self-helpful, but you cannot avoid that.
242. *Mr. McLean.*] Do you approve of the system of temporary relief that is doled out by the private benevolent asylums—the district benevolent asylums—throughout the country and suburban districts? There must always be a very great number of organisations, local and general, for the relief of the sick. If I heard there was a poor woman living at the foot of my garden whose children were starving, and whose husband was in Western Australia, I should naturally send down a blanket and some food for them. In that way acts of private benevolence are taken in hand by small committees of ladies, and then the same thing extends to the larger societies.
243. But you have no reason to believe that the existence of these societies directly encourages pauperism? I think that relief is sometimes given a little too indiscriminately—without due inquiry. The aim of the society, of which I spoke just now, is to check these unscrupulous people, of whom there are a great number, and detect professional mendicants.
244. You do not think it would be possible for these cases of indigent old persons to be dealt with purely by private benevolence? No; it often is done. You notice that there is 1s. a week paid, perhaps, by fifteen ladies in a small neighbourhood to keep some old woman for the rest of her days—and a very good thing too. I am afraid that the tendency of State aid in this direction is to paralyse private effort more than otherwise would be the case. At the same time it would be a very unfortunate thing if private charity were stopped altogether by the State undertaking the whole of this work.
245. *Mr. O'Reilly.*] You said, and I think very truly, that there is perhaps no country in the world in which the class of poor with whom we are now dealing are more liberally dealt with than in New South Wales? Yes.
246. Do you think our reputation for liberality in that direction tends to attract the pauper residuum from the other colonies? It may have that effect to a slight extent, but not materially.
247. *Mr. Wilks.*] Do you think that the mere fact of State aid being suggested would create a class of hereditary mendicants? I think it would be necessary to institute a very close investigation into every case by a very strict inspector before the Government was committed to making any such allowance.
248. You do not conceive of any scheme from which you could eradicate officialism? No; it could not be laid down on paper; it is a matter of intelligent administration. As you know, there are a great number of people in the community who have a tremendous horror of what they call the poor-house.
249. *Mr. O'Reilly.*] I should like to know how our present police administration works in with the existing system? That is a very pertinent question. As the Charity Organisation Society is administered, we receive a very large number of inquiries from private individuals, and also a large number of references from the Charities Department. It is fortunate that I have such a large number of police scattered over the country who can investigate these cases, which they would still have to do under any system. In the administration of out-door relief we must make the police cover the whole country. At present we detect a large number of cases of imposture.
250. *Chairman.*] I gather from one remark you made that you consider a system of old-age allowances to the extent, say, of £15 or £16 a year to deserving people would not only be advantageous to the old people themselves, but also to the persons who boarded them? Most undoubtedly. They would be a kind of protection, and they would not live in idleness; they would be employed about the homestead in bringing in the cattle or milking the cows, or cleaning up the premises, and they would protect the home while the bread-winner was away.
251. While the husband or bread-winner was away splitting or clearing land or driving there would be some male person at home who would be a protection to the family? Yes; and he would be just as good with a weapon in his hand as an able-bodied man would be.
252. And the money granted to the person boarding the old inmate would be a very great assistance to struggling selectors and farmers in the country district? Yes, if it were only 7s. a week. That would buy a quantity of provisions.
253. *Mr. O'Reilly.*] But we are to clearly understand that these remarks have not a general application to the indigent poor now in the asylums? No. I should say that to begin with the system should only be applied to exceptional cases. The history of each case would have to be investigated before relief was granted.
254. *Chairman.*] Have you given any attention to the American method of dealing with charities? Only as regards the young; I know nothing about their aged poor.

WEDNESDAY, 15 JULY, 1896.

Present:—

Mr. CHAPMAN,  
Mr. MCGOWEN,

Dr. GRAHAM,  
Mr. SCHEY.

E. W. O'SULLIVAN, ESQ., IN THE CHAIR.

Joseph Creer called in, sworn, and examined:—

- J. Creer.  
5 July, 1896.
255. *Chairman.*] What position do you hold? Superintendent of the Government Labour Bureau.
256. You have noted the proposals that have been before Parliament for the establishment of a system of State insurance or old-age pensions? Yes.
257. Would you give the Committee the benefit of your advice in that matter? I have not studied the question very closely, nor have I read very much regarding it, although I have given it some thought, having had a large number of old men to deal with from time to time. I am not altogether favourable to

J. Creer.  
15 July, 1896.

a system of pensions. No doubt it would be beneficial for one section of the infirm unemployed, but on the other hand, I do not know that it would do very much good. In a very large number of cases a pension would be put to a bad use, though in other cases there would be plenty of old men who would very well and wisely appropriate a pension for their maintenance in old age. I may say at once that I am not at all in favour of the system of maintaining our old people at present in vogue in the Colony.

258. At the Labour Bureau you did, for some time, administer Government funds in the way of giving relief to the poor? Yes, and we do now to some extent.

259. How do you administer this money? Last winter we had a very large number of men—not only old men, but all sorts of destitute men—working for rations at the Centennial Park. That has, to a large extent, ceased; but we still have from 160 to 170 per week of old men from 60 to 75 years of age, who have families—some of them very young families—unable to do heavy manual labour, and we send them out to the park now, and they get rations for so many hours' work.

260. Did you not also give small sums of money per week to the heads of families among them? No; we gave no money except in the shape of rent, for which they work.

261. And are you giving rent now? No.

262. From your wide knowledge of distressed human nature, having seen a great deal of it of late years, do you think we could work a system of old-age pensions among the class whom you have been in the habit of relieving? A large number of them could be supported by pensions, and no doubt would make very good use of the pensions; but at the same time a large number of these old people, if they got a pension consisting of so much cash per week, would make a very bad use of it. There is a great difference in the style of living and the disposition of our old people. But I think the system of separating old married people in their old days is the most barbarous that could be adopted in any Christian community. If ever there is a time in the life of a married man and his wife when they should be together, it is in their old age. The system I should like to see in operation would be a kind of community of old people, where they would have a large area of good land, attached to which would be a barrack system of small cottages, where the man and wife could live together and work on the land, cultivating vegetables and flowers, and a variety of produce that would be marketable, the returns from which would, to a large extent, go to support the community. The very exercise that these old people would get by a little light work of that nature would be of the greatest benefit to them, and living together in a community like that they would be happy and peaceful, and would enjoy life a thousand times more than they do now, being shut out, as it were, from the world. Under judicious management and good discipline the place could be made very comfortable indeed. With a system of light work, such as I have suggested, the cost per head of supporting them would be less than it is now, owing to the services they would render, and the life they would lead would be much better in every respect.

263. What do you think would be the amount per head required to sustain these old people? It is rather difficult to say; but if you had small cottages with a kind of barrack where they could reside, the cost of maintaining them, in my opinion, would not be much more than from 5s. to 6s. per week—hardly that in a community of old people.

264. Would you prefer to see that system carried out rather than the one that has been suggested of boarding out the old people with families in the country districts and suburbs? Yes, I certainly would.

265. But would not these old people, as they grew more advanced in years, require someone to take care of them? Of course they would require caring for; but one section of the old people would take care of the others. If you had a community of old people living together, as I have suggested, they would form a kind of colony of their own, and the social life among them would be most beneficial. Some of the old people might afterwards be drafted into private families—men, for instance, who would be capable of doing a little work about the house, attending to a garden, cleaning up, and one thing and another. There are plenty of families who would be glad to have a respectable old couple, whose respectability would be proved by the fact of their living in this community, and whose services could be utilised in this way.

266. Would you suggest that they should work as a community, putting all their profits into a common fund for the common benefit? Yes, for the support of the community.

267. Would that not be something like the village settlements which have been tried here and have failed? Yes; it would be on the same principle. But, in the first place, for a community of that kind you should have thorough good land and a suitable site. These old people would not be able to work hard or do very much, but they could do sufficient light work to assist materially in defraying the cost of their maintenance.

268. Did you have anything to do with the village settlement movement that took place a little while ago? Yes; I was on the Board from the commencement.

269. What were the reasons of the failure of those settlements? In the first place, I believe, because the management was bad, and selection of men; and in the second place, because the land was not at all suitable for a village settlement, and too many people were sent to the settlement. The land was most unsuitable; it was not good enough for cultivation purposes—it was badly watered.

270. Is it not a fact that those who have preferred to work an adjacent settlement on an individualistic plan have succeeded? They have succeeded to some extent. I am satisfied that a village settlement on the individualistic plan might succeed, while as a communistic settlement it would not succeed.

271. Still you suggested just now that we should work these communities of old people in that way? But the two cases are very different. These old people would be put there for their own comfort and to assist towards their maintenance. You have to maintain them somewhere and somehow. They would not be put there with a view of making a permanent living, such as you would expect in the case of a village settlement. It would merely be a resting-place for their old age.

272. Would you suggest that in each of these communities there should be a Government representative as manager? Certainly; there should be a manager, and a very good one—a man who would be full of sympathy for the old people.

273. *Dr. Graham.*] What were the village settlements started for chiefly;—were they started to provide a kind of home for the pauper class? They were started for the purpose of alleviating the distress then existing among the unemployed.

274. Irrespective of age? Yes.

275. So that it really was not a method of dealing with the pauper class? No; the object was to try and permanently settle a number of the unemployed—to put them in a position in which to live without Government aid.

- J. Creer. 276. But there was no limit as to age? No; there were very few old men. You might say that they were men in the prime of life.
- 15 July, 1896. 277. And numbers of the men you send out to the Centennial Park are between 60 and 75 years of age? Yes.
278. Have you many of them? We send about 160 or 170 a week.
279. If these men had not that work, would they naturally drift into the poor-house? They would have to live on the Benevolent Asylum or the poor-house. There would be no alternative, because no employer would select them to do heavy work. They are past that, but they can fill a barrow of sand and wheel it, and they are not driven.
280. So that if there was a system of old-age pensions in vogue these men would take the pensions and would not do the work? There is no doubt they would. If they got the pensions they would not work.
281. *Mr. McGowen.*] The maximum number of these old men working in the Centennial Park is 170? Yes.
282. And they are between the ages of 60 and 70 years? Yes.
283. Therefore, they are fit for State pensions? Yes; some of them are 75 years of age, and one or two 80 years.
284. Does the number increase, or is that the limit? That is the limit.
285. Then 170 is the limit you have ever reached? Yes; in the case of the old people—that is, this winter; but last year, when we were sending everyone there, old and young, we had 1,500 odd at times.

Robert Thompson Paton called in, sworn, and examined:—

- R. T. Paton. 286. *Chairman.*] What position do you occupy? I am Government Medical Officer and Vaccinator.
- 15 July, 1896. 287. *Dr. Graham.*] This Committee has been appointed with the view of ascertaining whether it is possible for the State to initiate a system of pensions for people of old age which will, in a measure, do away with the pauper system at present adopted. You have a great deal to do in your position as Medical Officer with receiving destitute people? Yes.
288. You have charge of what is known as the Government Dépôt, to which all sick and destitute people are sent? Yes.
289. How many of these a week do you receive? Last year I think I had something like 9,000 applications by people of both sexes.
290. Chiefly old people? Yes; the majority of them were old people.
291. I believe it is your duty to classify these people, and draft them into the various institutions? Yes.
292. If a man is chronically ill and destitute, where do you send him? He goes on to one of the Government asylums—either Rookwood, Liverpool, or Parramatta.
293. And if a man is purely destitute, without being chronically ill, where does he go? I do not get many of the purely destitute. Most of the people I get are ill as well as destitute.
294. Suppose he was a man over 60 years of age and not able to earn his living, where would you send him—to Parramatta? I would give him a recommendation to the Asylums Department, and they would send him on. I would certify that he was suffering from senile debility—that is, presuming he was old and unable to work.
295. Do you know whether in these asylums to which you send these old people any distinction is made between the sick and the pauper—by way of housing or caring for them? There is a hospital at each asylum—a portion of the asylum which is called the hospital. The class who are very ill are admitted there, and I understand they are seen every day or two or three days a week by the visiting medical officer.
296. I suppose you have often visited these asylums? No; I have only visited the asylums, I think, three times altogether.
297. Of course the mere fact of the chronically sick going to these asylums causes them to be ranked and classified in the returns as pauper patients? Yes, they are all returned as pauper patients.
298. Do you think that is either fair to them or fair to the State;—do you think it is a fair thing for us to publish to the world that we have so many paupers made up in this way;—do you not think that a man whose chief fault is chronic ailment should be drafted off to a hospital, not as a pauper, but as a hospital patient? My opinion is, that if you had some of the institutions with, it may be, greater facilities for attending to the sick, and you called them hospitals for chronic and incurable diseases, that would be a much better way of classifying the inmates than sending them on to an asylum as paupers.
299. It would also affect the returns as regards the number of paupers—subject of course to the definition of a pauper? Yes.
300. As things stand now the way we deal with our destitute sick is that if they are acutely ill you send them to a general hospital in Sydney? If they are acutely ill I send them to the nearest hospital.
301. If they are chronically ill you send them to the asylum? Yes; and if they are acutely ill, but are able to bear the conveyance, I send them to the Coast Hospital.
302. Suppose a man was chronically ill with a disease like cancer, where would you send him to? They have a sort of pavilion in connection with the Liverpool Asylum which is called the cancer hospital. I would certify that he was suffering from cancer, and if it was not a suitable case for operation, I would send him to the Charities Department, and they would send him on to Liverpool.
303. And the same with regard to phthisical cases? Yes; they have another ward at Liverpool where phthisical patients are treated.
304. We are told that these patients are all mixed up heterogeneously with the general run of the pauper inmates;—do you know if that is the case? I understood that it was not so. I understood that the cancer patients remained in one pavilion, and that the pulmonary cases were also treated in a separate pavilion.
305. If a system of State pensions was initiated in this country, the pension being of a reasonable amount, do you think it would in a great measure be adapted to such a case as that of a chronically ill man—that is to say, do you think it would meet his wants without his having to go to a place like an asylum? I do not think so. A man who is chronically ill requires medical attendance, and it would cost more to have him treated in a house than you could reasonably expect any pension to meet.

306. Do you think from your general knowledge of these cases that the pension system would meet a case of senile debility simply? There would be a difficulty in keeping a very old man in any family. For instance, he is often unable to retain his urine and fæces, and he has to be bathed, and so on. I do not know how a very old man, or a sick man, could be attended to in a private-house except at very great expense.

307. You think that is true of the majority of old men and women who are now inmates of the asylums? Yes, it applies to the majority.

308. The great majority? As far as I am able to judge they would not be very desirable in an ordinary family as boarders. I do not think that the ordinary family would go to the trouble of seeing that they were bathed, and that they had their medicine, and so on. They could not do it except for a considerable sum, because they would have to wait upon them.

309. Still you think that there is a type of man and woman who gets very old, and who having a little money, say a few shillings a week, might possibly with comfort be boarded out in that way? Yes; there is a certain percentage of them with whom that could be done.

310. But you think the percentage is very small? Yes.

311. Do you think it is far beyond the mark to say that half the people going into the asylum might well be boarded out under the pension system;—do you think that would be an exaggeration? I only see the sick poor, and from my experience I should say that you could not do that with one-half of them. I should doubt if 10 or 15 per cent. of the people who pass through my hands could be boarded out. As a matter of fact a very large percentage of the people who pass through my hands are alcoholics.

312. *Mr. McGowen.*] Could you state the exact percentage? I could not state exactly; I know a great number of them come to me. When I speak of the number who come to me, I mean applications, not separate persons, because the same man comes perhaps two or three times a year. A good number of those applying have just come out of the asylum. They have been out for two or three days, and when they come to me it is evident that they have been drinking the day before or that morning. I can smell liquor on them, and they do not appear to be absolutely sober.

313. *Dr. Graham.*] Do you think from your general knowledge of these things that any system of relief which carried with it a certain money grant would be just the kind of system liable to be abused by these people, if they had the opportunity? The alcoholics I speak of I am inclined to think would abuse it.

314. That would not apply to all? It would apply to a good percentage of them.

315. As a medical man you know that nearly every system of medical charity is liable to be abused—take the out-patients of the hospitals for example, and the members of benefit societies, and institutions of that kind. Do you not think the same abuse would prevail among old people if a system of old-age pensions were established, irrespective of necessity? It would depend a great deal on what form of application was necessary to obtain the assistance of the Government. If it were easy to obtain a pension and a thing that very few people would know about, I daresay it would be abused.

316. You do not know how the police relieve poor people with money grants? As far as I am aware the police do not give money.

317. The Inspector-General of Police has told us of some fund which he distributes? With regard to what the police do in this matter, I may mention as an illustration that I have only to-day received from them the addresses of two people whom they asked me by telephone to visit, both of whom are described as sick and destitute. I will visit them some time this evening. If they are urgently ill I will send them to the hospital. If they are cases which can be treated in the Coast Hospital, and they can go to the dépôt to-morrow, I shall send them on to the Coast. If they are suitable cases for the Benevolent Asylum, I will inform the Charities Department, and get them to remove them to an asylum.

318. *Chairman.*] And who would remove these people for you? If they are able to be removed in a cab, and they are very sick, I will pay for the cab there and then, and give them a note to the hospital. I carry a lot of forms in my pocket for the purpose. This is what is called an interim order. I fill up one-half and send it to the Medical Adviser, and I give the patient the other half to take to the hospital. That is the cheapest way. If they are not well enough to travel in a cab, I have to get the hospital people to remove them in an ambulance; and if the case is one for the Coast Hospital, we have an ambulance which goes every morning to the Coast Hospital, and I should send the patient in that. If they are fit to go to an asylum they are quite fit to be taken to the station in a cab and sent on. If they are not fit to be taken in a cab that way, I would send them to the hospital—I would not send them to an asylum.

319. *Dr. Graham.*] Do you think it is a correct thing for the State to house chronic sick in the hospital of a poor-house? People who are chronically sick should, I think, be in a hospital something like the Longmore Hospital—a hospital for incurables and for the chronic sick.

320. As it is now they can only go to the Benevolent Asylum? Yes. Another thing I should like to say is, that there are a number of people who will not go to the Benevolent Asylum; they say they would rather die in a hovel or in the streets than go to a benevolent asylum. But if the place was a hospital for incurables and chronic cases I think they would go without demur. They do not like the name of a benevolent asylum.

321. Those are the people who would gladly take a pension? Yes.

322. *Mr. McGowen.*] You know that the average age of the inmates of our asylums for the infirm and destitute is 63 years? Yes.

323. What percentage of these inmates do you think would go to a hospital for incurables? A good number of people go into the benevolent asylums without coming near me; but I should say that the majority of people who go through my hands would go to a hospital for incurables. For instance, I have cases of chronic Bright's disease, the patients are sent to a hospital, and they come out again, expose themselves to the cold, and so on, and they get an attack of uremia. They become very ill, and I send them to the hospital again. They come out again in two or three weeks time, they eat unsuitable food, or become exposed to cold, and they get bad again, and I have to send them on to the asylum. The duration of their life would probably be five or six years, or even longer, and I could not keep them in the hospital all that time. I must send them somewhere, and the only place I can send them to is the Asylum for the Infirm and Destitute. That applies equally to cases of phthisis. The patients get a little better in an asylum; then they come out and are exposed to cold, or over-exert themselves, and have hemorrhage again, and I have to take them into the hospital and keep them there until they are built up a little again, and then I must send them on to an asylum. Sometimes we have a lot of trouble to persuade them to go to the

R. T. Puton.

15 July, 1896.

R. T. Paton. the institution. They persist in coming out into the street, and it is only a matter of time when they come back to me worse than they were before. Every time they come back they are a little further down the ladder.

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324. *Dr. Graham.*] And you think that by sending them to a benevolent asylum you increase the length of their days? Well, we give them a certain amount of comfort, shelter, and food.

325. Do you think they would live long? In some cases they would; but I do not know that those suffering from phthisis would.

326. But kidney troubles? Yes.

327. If these people got a little pension, and lived in their own homes, they would not have even the same comfort that they would get at the Benevolent Asylum? The pension would probably only provide them with shelter, food, and clothing. In addition to these, medicine and medical comforts would have to be provided. Probably the pension would not be sufficient for that purpose.

328. *Mr. McGowen.*] Would all the patients passing through your hands, and whom you now send to Liverpool or Parramatta, be sent to a hospital for incurables if such an institution existed? I do not say that all of them would, but the majority of them would.

329. Would you say 75 per cent.? Yes; I should say about 75 per cent. of all the people who pass through my hands.

330. Then, with regard to the other 25 per cent. who pass through your hands, having regard to what you have said as to the attendance required for these old people, do you think it would be possible to board them out;—you would not send them on to a hospital for incurables if they were still able to move about a bit and help themselves? I get a number of people who would be suitable for the proposed pension system. I get very old men and old women who are bright and cheerful and clean, but some of whom are lame with rheumatism or something of that kind, and are not able to earn their living.

331. You do not think there would be more than 25 per cent. of the cases that go through your hands that could be boarded out? I do not think there would be more than 25 per cent.

332. The persons whom you would send to a hospital for incurables, no matter what their complaint might be, would, I suppose, be utterly destitute? They are all destitute before they come to me. They must be destitute before I can assist them.

333. *Dr. Graham.*] You have been in different parts of the world? Yes.

334. Have you had occasion to observe the method of dealing with the poor in any other part of the world besides this? No, except Scotland.

335. In Japan? No; I do not know how they deal with their paupers in Japan.

336. In China? With regard to China and Japan I was a foreigner there, and perhaps not able to judge very well; but as far as I could see everybody seemed able to earn their own living—how they did it I do not know. There were a few beggars, but not many.

337. *Mr. McGowen.*] Do you know anything about the mode of treatment adopted in the other colonies? No.

338. *Chairman.*] From your evidence I gather that only about 15 per cent. of the inmates of the asylums could be boarded out under an old-age pension system? When I speak of percentages in this connection I wish to explain that I do so entirely from recollection and without professing to be accurate. Allowing rather a big margin, I should say there are from 15 to 25 per cent., not more.

339. You say that only about 25 per cent. of the cases that go through your hands would be suitable to be boarded out under the old-age pension system? That is the case, assuming that under the old-age pension system the old people are to be allowed a certain sum of money, and to be boarded out like the State children.

340. Do many persons get into the asylums without passing through your hands? I have no means of knowing the number; but I fancy cases are sent from the country districts.

341. When the destitute poor or sick are sent down from the country districts, do they pass through your hands? No; only those who make direct application to me.

342. Then there must be a large number in the asylums who do not pass through your hands? Yes.

Edward Maxted, Esq., called in, sworn, and examined:—

E. Maxted. 343. *Chairman.*] What position do you occupy? Manager of the Sydney Benevolent Asylum.

15 July, 1896. 344. Will you make a statement to the Committee showing the amount of pauper relief given at your asylum, and the method by which you deal with it? I will first explain with regard to the unemployed. Of these we have about 943 men on the books, representing 943 families, each averaging five persons. If you multiply the 943 by 5 that will give you the number of individuals of this class whom we are assisting.

345. What relief do you give them? The quantity of food varies. It ranges from twelve loaves of bread to four loaves per week, 6 lb. of flour, 6 lb. of meat, and  $\frac{1}{2}$  lb. of tea. We give also blankets and boots after the inspector has made an investigation and reported that these items are absolutely necessary.

346. *Mr. McGowen.*] The persons receiving this relief have to be absolutely destitute? Absolutely destitute. A visit is made to the neighbourhood, and inquiries instituted as to the character of the persons, and the inspector furnishes a report in each case, which is considered at a meeting of the Committee, who decide whether or not the persons are entitled to relief.

347. You pay rent in some cases, do you not? Not in the case of unemployed families.

348. You say that you make inquiries, therefore, besides being utterly destitute, must not the case be also deserving? Yes; it must be deserving as well as destitute.

349. If the man was in the habit of getting drunk, would you give relief then? If we saw that the conditions of the home were such that it was undesirable for the man or the woman to remain in the house, we would say, "Bring your children down to the institution, and we will care for them there." But that would be a very rare case.

350. *Dr. Graham.*] You offer to assist the children, but what do you do in the case of the man or woman? We report the matter to the police. I cannot, however, call to mind at present where that has been done. The cases we discover are almost without exception deserving cases. Knowing the machinery we have for making inquiries, I do not think an application would be made to the institution unless the case merited relief.

351. *Chairman.*] Are there any cases in which you pay for the rent? Yes; we pay in the case of widows with children, deserted wives with children, and in the case of old age and decrepitude. E. Maxted.
352. What do you generally give? The sums range from 3s. to 1s. per week. Last year they ranged from 5s. to 1s. a week, but the calls upon the Society were so great that the finances would not stand the strain, and we had to reduce the allowance. But in my opinion the relief we give is not nearly sufficient. 15 July, 1896.
353. *Dr. Graham.*] With regard to the so-called unemployed cases, are the persons relieved the families of men who are all physically capable of working? Yes; otherwise we would transfer them to the ordinary list, and call them cases of sickness.
354. Where are the fathers of these thousand families who are destitute, and to whom you give relief? The bulk of them are living at home, but many of them are away looking for work in different parts of the country. Some have been sent away fossicking, and so forth, and some have gone to Western Australia.
355. Are some of these families without a head—without a father? Yes; many of them are without a head at home. But we satisfy ourselves that the man is away looking for work. If he has deserted his family we insist on the wife issuing a warrant against him.
356. Then you do not classify the deserted wife with the purely unemployed;—you say that of the families of unemployed men who are able to work and cannot get it there are 1,000? Yes.
357. Do you think if there had been very many more you would have known of them? We can only speak of the number who apply at the institution.
358. And yours is the chief institution giving relief to the poor and destitute of the city? Yes; the others are comparatively poor and insignificant.
359. *Chairman.*] Will you now give the Committee information concerning the relief afforded by the Benevolent Society to cases other than those of the unemployed of which you have just been speaking? At the beginning of the year there were 211 widows whose old age and infirmities prevent them from doing much work; 264 widows, with 919 children—these will be all young children; 82 deserted wives, with 263 children.
360. *Dr. Graham.*] Unable to work for themselves? These women can do a little washing, but their families are so large that they cannot earn enough to support them, and in these depressed times they cannot find work as they used to do. It is within my recollection that women could formerly get work at washing where they cannot obtain it now.
361. You find a little relief goes a long way with these people? It enables them to keep the children from becoming a burden on the State, and in that way it really means economy to the Government. If the children were maintained by the State it would cost so much per annum for their maintenance, whereas the relief given by our Society, in the shape of a few loaves of bread and 2s. or 3s. a week, enables these women to keep a little home together, with great benefit to themselves and the children. In addition to the numbers just mentioned, there are fifty-eight aged and destitute couples.
362. *Chairman.*] How much a week do you pay to these, or how do you sustain them? We allow them 1s. or 2s. a week, but, in my opinion, it is really work not well done. Some seven or eight years ago, with the honorary secretary of the time, I took up the matter very strongly. I went round to the homes of many of these aged couples, and found that they were living in a very destitute condition. I brought up reports to my committee which led to a deputation taking place to the Colonial Secretary, and finally a number of cottage homes for aged couples were established at Parramatta, as the result of the steps thus taken.
363. What does your institution do for these aged couples? I have a book here which gives some old typical cases, illustrated by portraits. Here is the case of an old woman 93 years of age. She gets two loaves of bread, 1 lb. of meat, 1 lb. of flour, a little tea and sugar, and a couple of shillings a week, and she makes periodical visits for boots and blankets, which we never refuse, because we know the case to be a deserving one.
364. *Dr. Graham.*] How does she pay her house rent? She lives in a room with another family. I think the rent of the room is about 3s., and she makes up the difference, she says, by selling wares—tapes and so on; but I fancy people do not buy them, but give her sixpences and shillings, and she makes up the difference in that way. But, in my opinion, she ought not to be called upon to make up the difference in that way. I think she ought to be provided for.
365. *Chairman.*] What, then, would be the total cost of the maintenance of this woman per week, including the bread and boots and other things you give her? It would run to about 3s. 6d. a week, or £9 2s. a year. I am giving you an illustration of the lowest amount it is possible to support existence upon.
366. *Dr. Graham.*] Would you give us the case of a married couple? Yes; I will take one of the typical cases we have had on the books for many years—a couple called Darby and Joan—very respectable old people. In the ordinary way, if we withdrew assistance in this case, we could not send these two people to the cottage homes for aged couples, because there is no more room there, and these unfortunate people would have to be separated and placed in different asylums, which, in my opinion, would simply kill them, they are so fond of each other. They are both about 70 years of age. The relief given to them at the Benevolent Asylum consists of four loaves of bread, 2 lb. of meat, 1 lb. of flour, and some tea and sugar, and I think they get 2s. a week for both. That comes to about 6s. a week. The rent of their room is 5s. The man does a little bit of cobbling, and earns a shilling or two in that way.
367. Suppose he was too old to earn even 6d., what would you give him then;—would the Society increase his allowance? We should have to hesitate considerably before doing so, because there are such a large number of widows with young children requiring the maximum amount of rent money, viz., 3s., that it would only be in a very extreme case where we should give a married couple 3s. a week, especially in the present condition of our finances.
368. And 3s. a week would not keep them? No.
369. In other words, if this man were really thrown upon your care in dire necessity he would have to go to the Benevolent Asylum? Precisely. The couple would have to go to two different institutions—one to Newington and the other to Liverpool.
370. How many of these cottages are there at Parramatta? I think there are twenty, and they are always full.
371. And they originated as the result of your investigation of certain cases? Yes; I believe that they originated as the result of my investigations, aided by Mr. Josephson, at that time the Society's honorary secretary. 372.

- E. Maxted. 372. And you think it is only a drop in the bucket compared with what should be done? Yes; it is quite inadequate.
- 15 July, 1896. 373. *Chairman.*] What amount would you recommend for a couple like that to keep them in comfort—as a pension? In this particular case, supposing the man did a little work, I should say 5s. a week each. If he paid 5s. for his room, and earned 2s. or 3s., that would leave 7s. Yes, I should say 5s. each under present conditions.
374. Would that keep them in food and clothes? Yes; with the little the man could earn.
375. *Dr. Graham.*] Suppose he could not earn anything, what would keep them? I fancy they could live on 7s. 6d. a week each, or less.
376. And be as well off then as they are now? Yes; in thinking of the old-age pensions scheme, it occurred to my mind that the bulk of the cases would require something like 8s. or 10s. a week to keep them—that is individual cases.
377. With regard to this old man who does a little work, you say that if he got a pension he probably would not do any work;—do you think he would be as comfortably off and as happy? It would be a wrong thing to give him a pension while he had the power to work. You would want an officer to investigate and report whether he was shirking his responsibility. There is no doubt that the pension would be an inducement for him to leave off work at once.
378. But in any system of old-age pensions there would have to be an age fixed, and if he reached that age he would be entitled to the pension? From my knowledge of these cases, I believe it is only human nature that if a man is doing a little work, and you say to him, “I will give you so much a week to live upon,” he will knock off work immediately.
379. *Chairman.*] You think then that from 7s. 6d. to 10s. a week would be sufficient to keep aged persons in comfort, whether male or female? I think 10s. would be ample.
380. That is supposing they were doing no work? Yes; and supposing they did not want a guardian. That is another phase of the question. Many of these persons are, to a large extent, helpless, or comparatively helpless, and they would want a little nursing and so forth. They would require to live with somebody who would look after them, and for this service payment would have to be made. We have many people receiving assistance from our Society who really should be in an institution. But they refuse to go. They regard an institution in the light of a prison, in which they are deprived of their liberty. We have refused them assistance, and have said, “No, you are not fit to be about; there is nobody to look after you; we will give you no money or provisions; you must go into an institution.” They go in and they come out again, and rather than force them back into the institution the committee reluctantly make them an allowance. In these particular cases it is necessary in their own interest that they should have a custodian—practically be boarded out.

THURSDAY, 16 JULY, 1896.

Present:—

Mr. CHAPMAN,  
Dr. GRAHAM,  
Mr. MCGOWEN,

Mr. WILKS.

Mr. McLEAN,  
Mr. O'REILLY,  
Mr. SCHEY,

E. W. O'SULLIVAN, ESQ., IN THE CHAIR.

Edward Maxted called in and further examined:—

- E. Maxted. 381. *Chairman.*] Do you wish to say anything with reference to the evidence you gave yesterday? Since putting forward a statement as to what I thought would keep old people I have thought well over the matter, and I have a few remarks to make, if the Committee would care to hear me. In my opinion the maximum pension to a single person should be 10s. per week, and the minimum pension 4s. a week. For aged couples I think the maximum should be 12s. 6d. a week, and the minimum 4s. These amounts should be graded from the maximum in accordance with the circumstances of the pensioners—their conditions of life, and their ability or otherwise to do a small amount of work. The pensions should be granted to aged men and aged women who are capable of attending to themselves in such homes as they might select. Those who are capable of attending to themselves would be in a comparatively independent position, and I think they might be allowed sufficient liberty to select homes for themselves. Pensions should also be granted to old men and women who are not capable of properly caring for themselves, and who need custodians—who need to be boarded out in the manner adopted in the case of State children. In these cases the pensions should not be paid to the people themselves; they are not capable of controlling their affairs, and the pensions should be paid to the guardians. In the case of aged couples pensions should be granted, as in the case of aged single men and single women, on the lines I have previously referred to. All the pensioners should be subject to State supervision, so that the pensions should not be misapplied, and as a precaution against intemperance, and the State should see that the money is expended in the maintenance of these poor people. For instance, at the Benevolent Asylum, when we give a person a few shillings a week for rent money, if we did not exercise supervision that rent money would not be paid to the landlord, but would be misapplied. Therefore, to protect ourselves, we insist that each person who receives rent money shall obtain a receipt from the landlord, showing that the money goes to the object intended by the Society. Aged persons who are hopelessly diseased, and who need constant medical supervision, should not be given pensions at all, but should be wholly maintained within asylums.
382. *Mr. O'Reilly.*] With reference to State inspection, do you propose something similar to that accorded to the boarded-out children? Yes, precisely upon those lines, and the lines adopted by the Benevolent Society. A Board should be appointed, with a staff of inspectors, and a report should be brought up from time to time as to the conditions under which these people live—whether they are living happily, and in accordance with the pension scheme generally.
383. And the total charge of supporting the old man or woman would have to come from the maximum of 10s. a week? Precisely.
384. Do you wish that the agreement between the pauper and the householder should be capable of being destroyed, either by the householder or the old man, at will? For instance, the old man has a quarrel.

quarrel; he will not chop wood on some cold morning, and he decides to take his swag and clear out;— is he to be at liberty to do that? If up to that stage his mental condition would warrant the severance of the agreement on his part, I should say decidedly. But in the case of persons of a weaker mental condition, who are incapable of judging for themselves, I think the Board or some other controlling influence should decide for them. E. Maxted.  
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385. *Chairman.*] How are the funds administered by the Benevolent Society raised? We have voluntary contributions from the public. Our income last year was £10,000 from all sources. The ordinary subscriptions from the public amounted to £800. Then I issued a special appeal, entitled "A Thousand Children in Need of Food," and we realised £2,500. This will become a permanent source of income, and I think we shall obtain that much again this year. Then there is interest on old invested sums, and there is a sum of £2,500 special subsidy from the Government towards our system of relief. The balance of our income is made up of sundries.

386. Is that the ordinary subsidy from the Government, or a special subsidy for this year? It is a special subsidy, which has been granted now for a few years.

387. In addition to that the Government gave you £2,000 a little while ago? Yes; but that was for the unemployed only. I am only now referring to the ordinary cases. That £2,000 was exclusively for the purpose of affording relief in connection with the unemployed, and a separate account is kept showing how the money is expended.

388. Referring more particularly to the usual operations of the Society, and putting that £2,000 out of sight altogether, what is the ordinary expenditure of the Society every year? The expenditure last year was £9,854.

389. And you relieved men, women, and children in distress in every part of the city? We do not relieve able-bodied men, except under this new arrangement with the Government. We relieve indigence in the form of old age, in the form of widows and orphans, and deserted wives and children. If a man is able-bodied we consider that our funds will not warrant assistance being given in such a case; but the applications recently were so numerous, and the cases appeared to be so distressing, that we made representations to the Government, pointing out these applications and the apparent distress, and the Government granted us the £2,000.

390. And that £2,000 you administered to the unemployed? It will all be exhausted in about four or five weeks' time.

391. *Mr. Chapman.*] Do I understand that you are expending that £2,000 along with the ordinary funds, or do you deal with it as a special fund for the maintenance of these adult persons? We are keeping an entirely separate account.

392. And it is really being expended to help the male adults who are in distress? To help the wives and children of the male adults. If a male adult were alone we would not assist him.

393. But if he was a married man with a wife and children, you would help him out of that fund? Yes.

394. At about what rate per week have you been expending that fund? From the 20th February to the 30th June we have expended £1,200, but the number of cases is increasing week by week.

395. I suppose you have a great number of applications—far more than you can deal with—in connection with that fund? No; we have never refused a case yet. Of course we have money in hand, and it would not be right to do so. When the money is gone we shall have to refuse.

396. But suppose you had a larger sum at your disposal—suppose the Government had given you £4,000—would you not have expended it much quicker than you have expended this money, and would you not have relieved more people? No; because the Society considers that the amount of relief given is sufficient to stave off suffering without pauperising; and, in my opinion, if they had more money no more relief would be given.

397. *Chairman.*] How is your Society managed? By a Board of Directors appointed by the subscribers at the annual meeting. Some of the directors are very old members.

398. Does the Government exercise any supervision or control over your institution? A Government officer comes round from time to time and checks the maintenance accounts.

399. But the Government have no voice in the management? No.

400. *Mr. Wilks.*] You stated just now that you would recommend that the maximum pension for a single man should be 10s. a week, and the minimum 4s.;—what is the reason for such a marked difference between the maximum and the minimum? The reason is this: A man who is absolutely helpless, and can earn nothing at all, should not be in the same position as a man who can do some work and earn something for himself. I cited a case yesterday of a man who could earn a few shillings a week by doing a little cobbling, and so forth. I think it would be very improper to give that man 10s., as against an absolutely helpless man, on the simple ground that he can work, and, if you give him 10s., he will leave off work.

401. If a man is absolutely helpless, why not place him in an asylum? Certainly, if he is absolutely helpless he should be placed in an asylum. Perhaps I should not have said absolutely helpless. What I mean is one man has less capacity for earning money than another man. One man is capable of earning more than another, although the amount may be small, and, therefore, I think a larger amount should be given to the man least capable of earning. I should have said that if a man were absolutely helpless, and required constant medical supervision and nursing, he should go into an asylum.

402. And with regard to a man of weak mental condition, would you also place him in an asylum? Yes.

403. In answer to Mr. O'Reilly, you said that you would give one of these old men freedom of will to break off his agreement with a householder? If he had sufficient mental power to look after his affairs, I should give him that freedom.

404. And if he had not the mental power, he would not be in a private home, but he would be in an asylum? Precisely.

405. *Dr. Graham.*] Are there any other branches of work carried on by the Society besides that of pure benevolence? It is a reception-house for destitute children, and for destitute women with children, and it is also a lying-in hospital.

406. *Chairman.*] Do not the Government give you some funds to pay for the expenses of some of these people? They make an allowance per head in accordance with an arrangement made in 1862.

407. The buildings belong to the Government, do they not? The whole of the grounds and the buildings belong to the Society.

- E. Maxted.* 408. Were they purchased by the Society? There was a grant by Governor Macquario in 1819. The history of the Society dates back as far as 1813.
- 16 July, 1896. 409. But originally the buildings were erected by the Government? They were erected by the prisoners for the purpose of an asylum for the poor, blind, aged, and infirm. An inscription to that effect is still over the door. In 1819 the buildings were transferred to the Society.
410. Then it is one of the oldest organisations in the country? I think it is the oldest.
411. And the Society has been carrying on its operations ever since that date? Yes, without intermission.
412. And since 1819 have you worked upon the same system as that now carried out? Not precisely. Up to 1862 the Society sheltered old women and old men, but in 1862 the old women were transferred to the Hyde Park Barracks, and subsequently to Newington, and the old men were sent to Liverpool and Parramatta. Since 1862, when there was a new constitution, the Society has carried on out-door relief and lying-in work, and has been an asylum for the reception of destitute women and children.
413. And for the assistance you give in lying-in cases and other cases the Government make you some consideration? Yes; they make an allowance.
414. An allowance equal to defraying the whole of the expenditure of the Society? Sometimes it is equal, and sometimes we have a loss.
415. *Mr. O'Reilly.*] I think the sole purpose of this Committee is to discover, if possible, some method of dealing with absolute paupers. You suggested just now that the minimum weekly assistance of 4s. might go to a man who, for instance, could do a little cobbling or other work, but who did not rank with the average worker in his particular trade? Yes.
416. If you once admitted any class who could work, and were capable almost of supporting themselves outside of Government assistance, would not the effect be to enormously enlarge the scope of the old-age pension scheme? I should think it would reduce the expenditure.
417. But increase the demand? It might increase the demand, but I should think it would decrease the expenditure, because, instead of giving 10s. in every case, you would only give 4s. in these particular cases. There are some instances where the 2s. or 3s. a week and the few loaves of bread which we give to these old people are sufficient. In such cases I would not give them 10s., because they would not want it.
418. *Chairman.*] But would it not increase the number of persons who would get old-age pensions if you departed from the idea that the pension should only be given to those who could not work;—would not the scheme then become too burdensome and expensive? There is that possibility, I daresay.
419. *Dr. Graham.*] How would you regulate the amounts you proposed to be given to these old people according to the various grades of strength? Only by careful investigation in each case, and by reports from the inspectors as to the conditions of life of these people, the same as is done by the Benevolent Society at the present time. For instance, the Committee will say, "We will give 3s. to this old man. To the next one we will give no money, but simply food"—the difference being determined by the conditions of life.
420. *Mr. Wilks.*] Have you given any consideration to the question of invalidity, and from your experience can you say whether there is a large percentage of malingering or imposture? Only two or three days ago I was speaking to the inspectors with reference to this point, and they could give no authoritative opinion, beyond stating that the percentage of imposture was extremely small. I think the reason is that people know that if they apply to the Benevolent Asylum their homes will be inspected, and if there is any imposture it will be discovered.
421. And the percentage of such cases is small? Very small indeed; but I believe it would be large if the inspection were not good.
422. And the percentage of impostors in the case of sickness is equally small as in the case of destitution? Of course it is easy even for a layman of experience in our work to deal with a sick person, but if we have any doubt—of course in seeking assistance at the asylum they would have to be very much enfeebled—we make them get a certificate from a doctor.
423. *Mr. McLean.*] Have you any way of discovering whether the cases that go up for relief at the Benevolent Asylum are dealt with by the district benevolent societies that are in existence in the suburbs? During the last month or two a large number of these small societies have sprung up in the different suburbs. I sent round a few days ago a circular letter to each of the twenty-three minor charities asking for a list of the names and addresses of the persons who were receiving relief, and we are comparing those with the names on our books. But in the case of the larger organisations—say the Charity Organisation Society, which is the largest, next to our institution—the returns are compared every month.
424. But there has hitherto been no method of checking these cases that have been relieved by the district benevolent societies? No; not in the case of the smaller societies.
425. But you are now endeavouring to prevent any overlapping? Yes.
426. *Dr. Graham.*] Your institution practically dispenses the bulk of the charity? Yes; the others are comparatively unimportant institutions, with two or three exceptions.
427. Suppose a system of old-age pensions were introduced by the Government, do you think the machinery available at the Benevolent Asylum would be sufficient to work such a system? Yes, I should think so, with additional assistance. In putting forward my idea that an old-age pension scheme is desirable, I am to some extent recommending that I should lose part of my occupation, because if this work were undertaken by the State we should not have to do it at the Benevolent Asylum, so that it is really an honest conviction that I hold.
428. Have you found within recent months that the calls upon your relief have been very much increased? The ordinary cases have increased at least 20 per cent. within the past seven or eight months. With regard to the unemployed, we started with half-a-dozen in February, and now we have between 900 and 1,000 families.
429. *Mr. McLean.*] Do you think the publication of the fact that large sums of money have been placed at your disposal by the Government has anything to do with increasing the number of claimants upon your funds? I could not say that it has increased the number of claimants, but I know that every home is inspected, and absolute destitution discovered before relief is administered.
430. But have these claims quickly followed? No; we watched that carefully, and we discussed it amongst ourselves. We said, "Now the statement has gone forth that £2,000 has been granted by the Government,

- Government, and we shall be overwhelmed at the next meeting." But the increase came gradually from week to week, until it worked up to the present number.
431. *Mr. O'Reilly.*] You had half-a-dozen cases you say in February? Of course we had to make a start, and we started with a few.
432. *Dr. Graham.*] But those persons whom one sees round the door of the asylum—do you not think the bulk of those cases have arisen from the time that statement was made? I do not think so.
433. In your opinion there is no relation between the two things? I would not like to say that. I can only say that the destitution exists in the homes. I do not think the people would have suffered without applying, even if there had been no statement as to a Government grant.
434. I noticed round the door to-day, for example, a great many men of the type whom you would expect to be working-men, who have not reached a decrepid age—men of 30, 40, and 50 years of age? Those are the unemployed cases. Those men are capable of work. What we call an unemployed case is a man who is capable of work, but cannot get it.
435. On the other hand, you have a great many old decrepid people too? We pass them on to what we call the ordinary list.
436. *Mr. Wilks.*] Do you not think that the rush of unemployed to your asylum was caused, to a great extent, by the Labour Bureau closing down upon them some two or three months ago? No doubt that had a great deal to do with it.
- 436½. They have simply transferred their operations from the Labour Bureau to your asylum? No doubt that has a great deal—a very great deal—to do with it.
437. *Dr. Graham.*] Did the Labour Bureau give them rations last year? They used to work for rations in the Centennial Park, and then the Park was closed. Of course, if the Labour Bureau had continued its assistance we should not have undertaken these cases. We should have said, "Go to the Labour Bureau, where you can get work, and food in return." But the Labour Bureau having closed, and the people being left in destitution, they come to our place.
438. Is a careful history kept of the inspectors' reports as to the condition of the homes of those who have applied for relief? Yes. We have a comprehensive report in every case.
439. Does the sum total of the thing reveal a serious state of things? Yes. Some of the homes are in a wretched condition, the inspectors tell me, with regard to want of bed-covering and boots, and want of sustenance.
440. Is there anything like systematic overcrowding in the homes? No; I do not think so.
441. Five or six children in a room, or anything of that sort? Not to any great extent, I think.

Mr. Robert Anderson called in, sworn, and examined:—

442. *Chairman.*] What position do you hold in the Highland Society? I am Vice-President.
443. In connection with that Society they work a pension system, do they not? Yes; it has come to that now.
444. *Dr. Graham.*] Are you also a director of the Benevolent Asylum? Yes.
445. So that, apart from the Highland Society, you have a good deal of experience in connection with the charitable work of the city? I am on the House Committee of the Benevolent Asylum, and I have been attending for two days a week for a long time.
446. The Highland Society have a benevolent fund at their disposal? Yes.
447. And they have had so for some years? For nearly fourteen years.
448. This fund is raised by subscriptions among the members? Yes, and also by what we make on New Year's Day in connection with the sports and concert.
449. To what purposes is this fund devoted? When we started we gave a good deal of relief to unemployed and others, but when I was honorary secretary I recommended that, seeing that we could do but little, we should devote our funds almost exclusively to the relief of aged and infirm widows who had seen better days, and were destitute through no fault of their own, and it is on those lines that the work is now carried on. I may say that we also assist widows with young children, and some aged and infirm men.
450. How many are there on the list? I think there are about twenty-seven at present; the number varies.
451. Are they all widows? No; there are two or three men.
452. Are there any married couples? There is one married couple, but assistance to them will soon be discontinued. The man is suffering from some incurable internal complaint, and has been twice operated upon at the Prince Alfred Hospital. Our funds are rather low, and I intend to try to get him assisted by the Benevolent Asylum.
453. What is the average age of these people whom you assist? From 60 to 87 years.
454. What weekly allowance do you give them? We have not been giving more than 20s. a month. It is now from 10s. a month to 20s.
455. How do these people come to you? They are generally brought under the notice of some member of the council in some way or other. Members of the council take charge of cases and visit them, and so forth. For example, I have six under my care.
456. Do you find that systematic aid given by the Society a great service to these people? A very great service. I may mention, in illustration, a case of one old woman 80 years of age, and who, I may say, is a daughter of a major-general of the British army. Seeing that she was getting very feeble, I asked her a few weeks ago if she would require more assistance, because I thought I could get her something from the Benevolent Asylum, but she told me she could manage very well with, perhaps, some little assistance she got otherwise, and she told me she could live comfortably on 2s. 6d. a week. That is what it actually costs her for her food. She is living in St. Peter's-lane, Woolloomooloo, where she has a room.
457. Is she able to attend to herself? Yes, at present; but she is now getting very feeble.
458. What does she pay for rent? Three shillings a week.
459. And what does the Society give her a week? We give her £1 a month, and she gets some little assistance from private sources.
460. So that what you give her does not actually keep her going? No; it is supplemented to a slight extent by private charity.
461. So that 5s. a week does not keep her? No; it would not keep her.

R. Anderson. 462. From your experience, what sum do you think would be sufficient to keep an aged and infirm person with reasonable comfort? That is a matter to which I have paid a good deal of attention, and I should say about 10s. a week.

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463. *Chairman.*] How do you raise the funds of your Society? By our annual subscriptions and by our Highland Gathering and Concert on New Year's Day.

464. I suppose you devote a portion of the proceeds of the Gathering and Concert to this fund? We devote it all to the fund. Our only expense consists in the rent of a room and £26 a year paid to a secretary.

465. The net profit goes to sustain these widows and poor people? Yes.

466. *Dr. Graham.*] How much a year do you spend in that way upon them? About £300 a year. At the end of this year we will have spent about £3,500 from the time we started.

467. And you are able to relieve twenty-seven people by the expenditure of that sum? Yes, about that number.

468. *Mr. O'Reilly.*] Partial relief? Yes.

469. And do you think that 10s. a week is the lowest sum that would keep one of these old people, including clothing, food, and board? That is if they were not capable of doing anything, and were entirely helpless. But I have no doubt that some of them could be maintained for less—some of the old people, for example, who live with their children, and for whom it would only be necessary to pay for food and clothing. In this respect it would be, as it were, a domestic education to have the old people living with the family, instead of in one of these gaols, as I call them, and which I think is the proper name for them.

470. *Dr. Graham.*] Have you any case in your mind's eye where you found some people willing to take charge of an old man or old woman on condition that you guaranteed them a few shillings a week? Yes; I know several cases where that could be done.

471. *Mr. McGowen.*] Do you know where it has been done? We have not the funds to do it; but I know some in my own neighbourhood at Murrickville who would be prepared to take in these old people, highly respectable persons.

472. *Mr. O'Reilly.*] On what terms? They would keep them for 10s. a week, I am sure.

473. *Dr. Graham.*] And this old woman you speak of in St. Peter's-lane—suppose you allowed her 5s. a week, and she was not able to do anything at all for herself, do you think you could house that woman with any respectable family for that sum? Not for 5s.

474. For what sum then—10s.? I am stating what we are able to give; I am not saying that it is enough. I should say 10s.

475. *Mr. McGowen.*] What does she get for the 3s. rent—only one room? Yes; but she has the use of the fire.

476. Would it be possible for two of them to club together? Yes; and that is what I expect would be done if this system were in operation. Two could live in a room together, and they could certainly live very comfortably for even less than £1.

477. You said it only cost the old woman of whom you spoke just now 2s. 6d. a week to live? I merely mentioned that case for the information of the Committee. She said she could live on that. But there are not many such cases, I think.

478. *Mr. Wilks.*] That 2s. 6d., I presume, would only cover the food supply, and would not include the clothing? That is so.

479. *Mr. McGowen.*] Where a couple occupied one room, as suggested just now, paying 1s. 6d. a week each rent, and being in receipt of 5s. each, there would be left a sum of 7s. a week to feed them, or a balance of 3s. 6d. each, instead of 2s. 6d.? That is so.

480. *Chairman.*] Is this relief given to persons other than those of Scottish birth or descent? We do not inquire into the nationality, because we appeal to the people at large on New Year's Day. They are chiefly of Scottish birth; but there are others, and we never inquire their religion or anything of that kind.

481. I suppose they are recommended by members of the Society? Yes.

482. *Dr. Graham.*] Do the people whom you relieve get aid from any other charitable source? There is one old couple who get £26 a year from the Freemasons' Benevolent Fund, beside the £12 a year we give them.

George Henry Marsh called in, sworn, and examined:—

G. H. Marsh. 483. *Chairman.*] What position do you occupy? Honorary Secretary of the Freemasons' Benevolent Institution.

16 July, 1896.

484. *Mr. McGowen.*] Can you inform the Committee the method adopted of relieving the poor in connection with your benevolent institution? In connection with Freemasonry we have what is called the Grand Lodge Board of Benevolence. All Freemasons are taxed 4s. per head per annum to support that fund. There is a Board appointed by the Grand Lodge, which meets once a month, considers all cases brought before it, and grants temporary relief to the extent of £20, or recommends the Grand Lodge to increase it to £50. In the case of an aged Freemason, a man over 60 years of age, a lodge is able to bring such a case from the Board of Benevolence on to our Freemasons' Benevolent Institution, which is separate altogether, and is supported entirely by voluntary contributions from the craft. Our committee meet to consider the case, and if they think it good enough they grant from 10s. to 20s. a week—mostly 10s. a week. At the present time we have sixteen annuitants, from 60 to 87 years of age. Our institution is only four years old. We started with £1,400, which we got from an old source, and which had been lying in the Bank for many years, and we now have £3,500. We are working to build up a fund of (say) £10,000, and then we hope to be able to launch out and do a large amount of good for aged Freemasons and their wives and widows.

485. *Mr. O'Reilly.*] Do you consider that 10s. a week is sufficient to keep them in comfort—an old couple? Yes, if they are able to live with relations or friends, who will look after them.

486. And is that the case with these? Yes; in nearly every case we have arranged for the old people to live either with a grandson, granddaughter, or other relation, or with some friend.

487. *Dr. Graham.*] Are there any cases under your supervision where the old people have to live entirely by themselves, supported entirely by the money you give them? No; I think in every case they live with

with someone who is looking after them. They are not entirely away from friends, as far as I can remember. G. H. Marsh.

488. *Mr. O'Reilly.*] That is to say, you are putting into practice the system we would like to see practised by the State? Yes, I believe so. 16 July, 1896.

489. *Mr. McGowen.*] The old couples are really boarded out at the expense of the Freemasons' Benevolent Institution? Yes.

490. Amongst friends? Yes; friends or relations—some one who will guarantee to us that they will look after them. In Sydney I go round and see these people periodically, and see how they are getting on. In regard to cases sent down from the country, I will give one as an illustration. There was an old Freemason at Kempsey; he had been a Mason for many years, and his age was 69. He suddenly became paralysed, and total blindness ensued, and he was unable to move. His lodge voted as much as they could raise—I think it was £10. It was only a small lodge in the country. They then applied to the Board of Benevolence, and they granted £20, which was sent up at the rate of 10s. per week. It was sent to the master of the lodge there, who looked after this old brother, and paid the 10s. a week towards his support. He was living with friends, and as soon as that £20 was done our institution was able to come to the rescue: otherwise that old man would have had to be sent into a Government asylum. But our institution stepped in and gave him 15s. a week for nine months, when he died. We guaranteed to keep him until his death.

491. *Mr. O'Reilly.*] Are you able to tell us the annual sum voted by your institution for this purpose? Last year we gave £277 away amongst eighteen people. Two have died recently.

492. And your revenue has always exceeded your expenditure? Yes; our revenue last year was £536, after giving away £277.

493. *Dr. Graham.*] Then your aim is to get a fund the interest of which will keep you constantly at work? Yes. We have £3,500, and we are not launching out now, but hoping to build up the fund until we get £10,000, and then we will work on the interest of the money, as well as the annual subscriptions. Up to the present time we have never used any of the interest, but have been adding it to the principal. When we raise £10,000 we hope to launch out and do more than we are doing now.

494. *Chairman.*] In addition to this fund, does the Masonic order dispense other relief? Our Grand Lodge Board of Benevolence gave away over £1,100 last year.

495. *Mr. McGowen.*] But the relief in that case was not in the nature of a pension, such as that administered by your benevolent institution? No; it was simply for temporary relief. The relief afforded by our benevolent institution is in the shape of a pension pure and simple, and the work is voluntary. It is supported entirely by voluntary contributions, and the committee please themselves as to who shall be assisted.

496. *Mr. Wilks.*] Have you any homes here? No. We do not believe in asylums. We hope eventually to have a cottage or two, where we can keep two or three old couples who have no friends; but we do not want to go into that, because it means expense. The work in which we are at present engaged entails no expense at all. There is no office rent, no secretarial pay, and nothing at all is charged besides the stamps and stationery.

497. *Mr. McGowen.*] I suppose there have been applicants whom you have had to refuse? Yes.

498. What percentage have you refused? During the year, which commenced with twelve annuitants on the books, nine applications for annuities were received. Of these, six were granted, two were postponed, and one was refused.

499. Practically then you have only refused one case? Yes, last year; but I think the year before there was a case.

500. Yet you say you want to launch out to a greater extent when you have only refused one application? We know that many lodges refuse to send cases on to us because they are hoping that we may build up this fund. They are endeavouring in country places to look after their own old people, rather than come upon us, in the hope to see this fund grow.

501. Do the lodges in the country grant pensions? No; only temporary relief.

502. As a matter of fact then there are legitimate cases for this fund with which you are unable to cope at the present time? Yes; if we took every case that was sent to us I suppose it would be so, or if we invited cases.

503. *Mr. O'Reilly.*] But the country lodges by affording temporary assistance relieve you considerably? There are cases where they have written to me saying they would like to put so-and-so on our books, but they would continue to help him for the present until we could build up this fund upon a firmer basis.

504. *Mr. McGowen.*] And practically they keep that person? Yes.

505. *Mr. Wilks.*] Do not suburban lodges vote fairly large sums of money for their own destitute that you hear nothing about? Yes.

506. *Chairman.*] With regard to the pensions you grant, have you any complaints from the recipients as to the insufficiency of the amount? No, none whatever.

507. Does the money keep them in clothes as well as food and lodging? Yes; we have never had any complaint. Of course they know it is purely a voluntary matter, so far as we are concerned, and that if they complained they might lose the pension altogether.

508. And the average is 10s.? Yes.

509. For the individual? Yes. There is an old couple at Waverley who live with a great granddaughter; they get 10s. a week between the two of them, and the Highland Society gives them 4s., and that keeps them comfortably. The great grandson could not afford to keep the old people unless he got something from an outside source. If it were not for our fund that old couple would be in an asylum, and would be separated. The old man is 87 and the old woman 85 years of age, and they have been married for over sixty years.

510. *Dr. Graham.*] If they had to live by themselves, could they live on the money you give them? No, I do not think so, because they are too infirm. They could not do anything for themselves at all.

511. Have you any standard of decrepitude that entitles these people to apply to you for aid;—do you fix any age? No; the committee have great discretionary power, and are guided by the circumstances of the case.

512. What usually are the circumstances—old age and inability to work? Old age, inability to work, and infirmity. The committee are guided by the circumstances as placed before them.

- G. H. Marsh. 513. *Mr. Wilks.*] What is the average age of the applicants? Over 60; we rarely deal with any case under 60.
- 16 July, 1896. 514. *Mr. O'Reilly.*] As a matter of fact, these pensioners could not be kept at the cost mentioned without the affectionate assistance of the people they are with? That is so.
515. It is not remunerative on the part of the persons to take these old people? I think that 10s. a week pays them well enough.
516. You think it covers the expense of clothing and food? In the case of a single man or woman, but not in the case of a couple. We have some single cases where we do not give as much as 10s., but only 7s. or 8s. They are people, however, who do something for themselves as well. In most cases the sum given is 10s., but we have power under the rules to give husband and wife up to 25s. a week.

Alfred Davis called in, sworn, and examined:—

- A. Davis. 517. *Chairman.*] What position do you hold? Registrar of Friendly Societies and Trade Unions and Actuary to the Public Service Board.
- 16 July, 1896. 518. With what Department are you connected? The Chief Secretary's Department. It is a sub-department.
519. What are your duties in connection with Friendly Societies? To register the rules, and make an examination to see whether they are in conformity with the law, and to receive the annual returns and tabulate them.
520. Have you any knowledge of the operation of these societies? Yes.
521. Do you know if any of them besides the Highland Society and the Masonic body maintain a pension system? Yes; nearly all of them.
522. *Mr. McGowan.*] And the amount ranges, I believe, from 6s. to 5s.? Yes; and from 7s. 6d.
523. *Chairman.*] Can you give us any definite information as to the amounts paid and the method of distribution? No, I cannot.
524. *Mr. O'Reilly.*] Could you give us an idea of the annual income of all these Friendly Societies? I could obtain that information.

WEDNESDAY, 22 JULY, 1896.

Present:—

MR. O'REILLY. | MR. SCHEY.  
E. W. O'SULLIVAN, Esq., IN THE CHAIR.

Alfred Davis called in and further examined:—

- A. Davis. 525. *Chairman.*] Have you prepared any information for the Committee? I hand in a list of the names of the principal Orders, and particulars of the sick and funeral benefits which are offered under their rules. [*Appendix E 1.*] There are a number of miscellaneous societies which have not been included. I also hand in a statement showing the position of the various Orders at the end of 1893, giving the receipts and expenditure for the year, and the amount of funds at the beginning and end of the year, and also the number of members. [*Appendix E 2.*]
- 22 July, 1896. 526. *Mr. O'Reilly.*] What is the annual expenditure of all the Friendly Societies? £227,000; the amount paid by way of sick allowance being about £57,500.
527. What is the total number of subscribing members of the societies? 63,433; and the total amount of their funds is £486,547.
528. *Mr. Schey.*] Does the return you have handed in distinguish between societies that pay a superannuation benefit and those that do not? No.
529. You are aware that some of the societies pay a superannuation benefit and others do not? In some of the societies there is what is called a superannuation fund. If a person is desirous of getting upon that fund he has to make application. He is then allowed so much per week from the fund. But it is at the option of the lodge—he has no right to it.
530. Taking a society, a copy of whose rules you have before you—the Manchester Unity Lodge of Odd-fellows—you do not say of your own knowledge that a member has to specially apply to become a participator in the superannuation fund? In the Manchester Unity the sick-pay is continued during the whole term of life.
531. You mean the liability to pay sick-pay continues during the whole term of life? Yes.
532. Is it not a fact that in cases of incapacity which cannot be remedied they draw a distinction between sickness and incapacity, and in cases of incapacity they allow a pension of 7s. a week; according to those rules they would not come under the head of sick-pay;—that is what is called a superannuation allowance, is it not? The Manchester Unity rules in this Colony have no provision for a superannuation fund. It is simply a continued sick-pay. The lowest rate of sick-pay—I think it is 7s. 6d.—is continued during the remainder of the illness.
533. Do you know anything of the Order of Royal Foresters? Yes.
534. Have they not a superannuation fund? In the case of societies that have superannuation funds, a man will be put on the fund if the district officers at their meeting choose to put him on the fund. If they do not want him to be on they need not put him on. He has no legal claim.
535. It is at the option of the members in every case? Yes.
536. It would be very useful if you could show us the societies that have a superannuation fund and those that have not, and also the conditions prescribed before incapacitated members can take advantage of a superannuation fund? In the Ancient Order of Foresters the sick-pay for six months is 21s., and for the next six months 10s. 6d. After twelve months of continuous illness the member can then be placed on the superannuation fund. But he must make an application for it—he has no legal claim. He can claim his sick-pay.
537. Is it not a fact that every one of these Friendly Societies recognises a claim for sick-pay so long as the sickness may last at the lowest scale of pay? That is virtually superannuation.
538. But is it not also a fact that some of the societies continue the sick-pay, and others have a special rule providing a superannuation fund, on which a man may go if he is not sick. To claim sick-pay from

a Friendly Society a man must be ill and receive a doctor's certificate. There are many members who are not ill, and do not want a doctor's certificate—they are merely incapacitated;—do not some of the Orders provide for that condition of incapacity? Most of the rules are to the effect that if a man is incapacitated from following his usual occupation he shall draw sick-pay. He need not necessarily be sick, but unable to follow his usual occupation. There is a great deal of laxity among them no doubt. If a man is a favourite in his lodge he will be put on, and another will not be.

A. Davis,  
22 July, 1896.

539. *Mr. O'Reilly.*] You stated that the total number of subscribing members in these societies is about 68,000? Yes.

540. Of that number, how many do you think are over 60 years of age? I have no mean of ascertaining.

541. Do you not think that these Friendly Societies relieve the Government of a large amount of responsibility that would otherwise devolve upon them? Decidedly so.

542. And in the event of a pension system being introduced, is it not likely that a large amount of work now done by the Friendly Societies would devolve upon the Government? I do not think so, because it appears to me that the chief reason for people joining Friendly Societies is for the sake of obtaining cheap medical attendance and medicine.

543. *Mr. Schey.*] And pay while they are sick? Yes. The chief thing is the cheap doctor, and, of course, they would never get that under a pension system.

544. In reference to the answer you have just given to Mr. O'Reilly as to the ages of the members of the Friendly Societies, is it not a fact that when Mr. Coghlan was Registrar of Friendly Societies he went into actuarial calculations in the case of a number of the societies, and practically compelled them to raise the rates of contribution, because a certain proportion of the members were of considerable age? No; the scales of contributions are calculated in exactly the same way that the rates of an insurance office are calculated. It has nothing to do with the average age of the members of the society.

545. But did not Mr. Coghlan make a special calculation, and point out to some of the societies that their scales were too low, bringing into view the fact that they had been established a number of years, and that consequently a number of their members were of advanced age? The rates do not depend upon the number of people in a lodge of any particular age, but on the actual ages. It would not matter if there were a number of people of the age of 60 in a lodge, or if there was only one in the lodge. Each one of that age would have to pay the amount that is calculated. It is immaterial whether there are a number of old people or a number of young people in the lodge if a properly graduated scale of contributions has been adopted.

546. That would not apply to the raising of the weekly contributions, which was done during the last two or three years; some of the Friendly Societies made a row about it, because Mr. Coghlan determined that they should increase their contributions;—if what you say was the only fact taken into consideration, that would result in the raising of the entrance fee? Certainly not. The entrance fee is nearly always put to the management fund—spent and wasted.

547. *Mr. O'Reilly.*] How do you mean wasted? The expenditure is far too large. Instead of saving it up, as it ought to have been saved formerly, and put to the sick and funeral fund, it was used in the management.

548. But are you speaking of present conditions? Not at the present time, because for the last few years the entrance fee has not been taken into account at all in adjusting the rates of contributions. In some of the societies the original tables were, no doubt, drawn up by competent persons. In the Guild, for instance, the highest entrance fee was £10.

549. *Mr. Schey.*] Are there any societies with a higher entrance fee than that? No. Whoever drew up those tables evidently did so on the principle of which you speak—of arranging the entrance fee, and then fixing a uniform contribution. If that entrance fee were graduated properly to make up for the extra value of a man's contributions it would be all right; but what first drew my attention to it was getting hold of a return from one of the guilds, and finding that though a good number of members had been initiated their total entrance fees only amounted to 5s. or 10s.

550. Then there was practically no entrance fee at all? Certainly not, although according to their rules there should have been a very heavy entrance fee.

551. *Mr. O'Reilly.*] But that is all remedied now? Yes.

552. *Mr. Schey.*] You say that the entrance fees usually go to the management fund, and are consequently wasted? Yes.

553. If the entrance fees did not go to the management fund, would it not be necessary to pay other moneys into that fund to make it sufficiently large to pay the managerial expenses? Certainly; but as a rule the societies have been in the habit of grading their entrance fees according to age. If the money all goes into the management fund, why should a member who is 40 years of age pay any more than one who is 20 years?

554. *Mr. O'Reilly.*] As a matter of fact he should, if anything, pay less, if the money is devoted to the management fund, because he will probably receive benefit for a shorter period of time? Yes.

555. *Chairman.*] Have you made any calculation of an actuarial character as to the amount that would be required for an old-age pension scheme? Yes, I have some figures here. A pension of 5s. a week for all persons at present of the age of 65 years and upwards would for the first year require £343,875.

556. *Mr. Schey.*] That is on the supposition that every person arriving at that age would claim and receive the amount? Yes; that everyone has a right to demand it.

557. Your calculation is on the basis that everybody would be paid that amount, and for the full year? Yes.

558. *Chairman.*] Is your calculation based on this year's population? I took this year's population, using as a basis the population according to the Census, and making an allowance for the deaths.

559. Have you any other calculations? I have some figures with regard to Mr. Chamberlain's scheme. Everyone before the age of 25 years should deposit £5, and should pay £1 a year up to the age of 65. When the survivors reached the age of 65 there should be in some fund the sum of £963,000 to provide pensions of £13 a year.

560. That applies to the population of New South Wales working a scheme like Mr. Chamberlain's? Yes; these figures apply to males only.

561. *Mr. Schey.*] Why did you take the males only? Because I happened to work out the figures relating to males. It would be easy to calculate the females also. I estimate that nearly 6,000 would

A. Davis.  
22 July, 1896. survive at the age of 65 out of a total of 11,939 at the age of 25. The value of the future pensions at the age of 65 would be £740,500, which would be less than the value of the annual contributions only up to that date, which would be nearly £778,000. But no allowance is made for the expenses of management and conducting the business, which would probably be very heavy. If, as some suggest, in case of death before the age of 65 years, the contributions should be returned, it would make a difference of £278,000. The contributions of £1 a year would then be insufficient, as the increased annual contribution to enable those contributions to be refunded would be nearly £7,000. Should allowances be made for widows and children it would probably require £17,000 for the widows of those who died before the age of 65, and the allowance for children would be £581,000; in other words, about £15,000 a year would be required to provide the benefits for widows and children. The original deposit proposed by Mr. Chamberlain of £5 before the age of 25 would be worth about £3,000 per annum during the 40 years, and the State would have to provide the difference of £12,000 a year. Mr. Chamberlain proposes that the Government should pay £15 for each person, not to bear interest, and to be paid when called upon; that is manifestly insufficient.

562. Do you think it possible for New South Wales to work a scheme like that proposed by Mr. Chamberlain? No, I do not.

THURSDAY, 23 JULY, 1896.

Present:—

MR. CHAPMAN, | MR. SCHEY,  
DR. GRAHAM, | MR. WILKS.

E. W. O'SULLIVAN, Esq., IN THE CHAIR.

Cornelius Joseph Morrissey called in, sworn, and examined:—

C. J. Morrissey.  
23 July, 1896. 563. *Chairman.*] What position do you occupy? I am acting secretary of the A.H.C. Guild.

564. Do you carry out any system of superannuation with regard to the members of the Guild? No; only the mortuary donation.

565. That is given to the widow and children? Yes. In case of the wife dying it is given to the member; but in that case the amount is not so large.

566. Then you have no system of pensions? No.

567. After the period when a member has received full sick benefit, does he then go on to any superannuation fund? No.

568. For how long does a member received the sick benefit? He receives a guinea a week for twenty-six weeks in succession; 15s. a week for thirteen weeks in succession; and 10s. a week for thirteen weeks in succession after that, and then he receives 6s. a week for twelve months. That brings it up to £56 11s. That is the total amount a member can draw. After that he cannot draw any more for five years.

569. *Mr. Wilks.*] Have the claims for mortuary donations been increasing during the last few years? No.

570. You have no invalidity pensions? No.

571. *Mr. Chapman.*] What is the amount of the entrance fee? It depends upon the age—from 2s. to £10 10s.

572. What is the greatest age at which you admit a member? Forty years.

573. What entrance fee do you charge at 40? £10 10s.

574. How long has a member, admitted at 40 years of age, to belong to the society before he is entitled to sick pay? Six months.

575. I suppose he is always entitled to medical attendance? Yes; from the time he joins.

576. Does he also get medicine free? Yes, always.

577. And you find that on the basis of an entrance fee of £10 10s. at 40 years of age it is profitable for the fund to take the risk of providing medical attendance and medicines and insuring the member for a total amount of £56 11s.? No; as in nearly all cases of 40 years of age it is not a profitable investment to admit a member, and the object of the entrance fee, £10 10s., is more to debar them from entering than encouraging them to do so.

578. *Mr. Wilks.*] You have no cottage-home system in connection with the Guild? No; it is purely a benefit society.

579. *Mr. Schey.*] What is your opinion of a system by which Friendly Societies would be enabled to found a superannuation fund on a voluntary basis, receiving from the Government a subsidy of (say) £1 for £1;—do you think that would be an advantage? I do not think it would be an advantage to have Government subsidy £1 for £1.

580. Do you think your own society, for instance, would be agreeable to the foundation of such a fund? I do not think so.

581. In your opinion that would be a distinctly good thing? I do not think so, inasmuch as members of my society would consider it pauperising, and prefer to carry on under the old regime of a self-supporting society.

582. What would be the disadvantages? I think, for instance, that a number of people would avail themselves of the benefit society in order to draw the pension.

583. Would that be a disadvantage? Decidedly.

584. How would that be so, supposing that the contribution imposed upon them was sufficient to pay all the expenses? Of course that would alter the matter altogether.

585. I am speaking of a fund which each society would start separately, making a conditional contribution, such contribution to be sufficient to cover the benefit to be received, with a pension, at whatever amount might be fixed, payable at 60 years of age? If the rate of contribution was fixed so as to safeguard the fund against imposition, I do not think there would be any objection.

586. So long as it was no burden on the funds of the society as at present existing, you see no disadvantage in it? No.

587. You think that all the other arguments would be in favour of such a scheme? Yes.

588. *Mr. Wilks.*] What system of check do you adopt in your society to prevent imposture? We have official visitors, who see that the sick members are properly attended by the doctor, and that there is no malingering.

589. You do not assist anyone outside of your own society? No.

WEDNESDAY,

## ON OLD-AGE PENSIONS.

WEDNESDAY, 29 JULY, 1896.

Present:—

MR. CHAPMAN,		MR. McLEAN,
DR. GRAHAM,		MR. SCHEY,
MR. WILKS.		

E. W. O'SULLIVAN, Esq., IN THE CHAIR.

Henry Harrington Greene called in, sworn, and examined:—

590. *Chairman.*] What position do you hold? Grand Secretary of the Independent Order of Oddfellows.
591. The Committee are desirous of ascertaining if you have any method by which you pension off old members of your society, either in the way of a superannuation fund or by means of a pension;—have you any such system? We do not call it a superannuation fund, but it is practically the same thing, although we have the right to say when it shall be abolished. We superannuate at 5s. a week.
592. How long does that payment last—is it at the will of the society? Yes; during the will of the society.
593. I suppose in most cases it is paid until death? Yes; the intention is to pay until death, but we have found that that does not work out quite satisfactorily.
594. What do members contribute extra for that? They do not contribute anything at present.
595. Have you many members pensioned off in that way? I could not give you an estimate of the number. That is a matter generally dealt with by the branch lodges; the payments do not come directly from the Grand Lodge funds.
596. *Mr. McLean.*] Are they paid out of a superannuation fund or out of a sick fund? They are paid out of the sick fund at present.
- 597-8. Are the sick funds of the Order separate funds in connection with each lodge or are they amalgamated—that is to say, does the district manage the whole of the sick fund? The management of the sick fund is entirely in the hands of the branches.
599. And, I suppose, some of the branches are very small? Yes.
600. Then you have not got a guarantee from the district behind the branches as far as that sick fund is concerned? No.
601. *Mr. Wilks.*] You have a great number of people, I suppose, on your books;—it is a very powerful organisation, is it not? Yes; it is very strong.
602. And you have had a long experience in connection with it? Twenty-five years.
603. Then you would be very competent to give an opinion with regard to an old-age pension system;—what is your private opinion about it? So far as I have examined the question, and taking authorities capable of expressing an opinion, such as Mr. Reuben Watson, who is acknowledged to be one of the best authorities on the subject in England, it is a matter that requires a great deal of consideration, so far as the work of the societies is concerned. We find now that the societies have been operating for some years while financially unsound. I do not think there is any society in the Colony that can be said, according to an actuarial test, to be working on sound principles, and the trouble has been with us to readjust our affairs in such a way as to meet the approbation of the authorities, considering the great liabilities we have undertaken.
604. I suppose you rather respect that actuarial decision? All those who have any knowledge of the working of Friendly Societies appreciate it, but I may say that there is a great preponderance of feeling the other way.
605. Do you think an old-age pension system would run in conflict with your system;—how would your members receive it? As applied to Friendly Societies, I think it would be repulsive to their feelings.
606. How would it be repulsive? Well, it has this effect—that State aid is not a desirable thing where the principle of co-operation prevails.
607. Have you considered the question of fixing any age at which people should come under the operation of a pension system? That is one of those problems in connection with Friendly Societies in regard to which there is a great deal that you have to take for granted that is not fair to the society. Of course the age would make a difference—that is, if you fixed a specific age for a charge against the superannuation fund. But at present Friendly Societies, owing to that large amount of sympathy that runs through their operations, do not treat their business as it really should be treated from a business point of view, and very often the liabilities are very much larger than they ought to be for that reason.
608. Have you any system for preventing malingering? That is the great weakness in connection with Friendly Societies.
609. Malingering does exist then even now? There is no doubt about it.
610. *Chairman.*] The Friendly Societies of Great Britain took a stand hostile to Mr. Chamberlain's proposal, did they not, at first? Yes.
611. But since then the Manchester Unity Order have passed resolutions in favour of an old-age pension? The difficulty, I understand, with the Manchester Unity in the old country is as to whether they should make it compulsory or voluntary—that is, the maintenance contribution towards the superannuation fund.
612. I gather, then, from your evidence that the Friendly Societies here would not be favourably disposed towards a Government scheme of old-age pensions? As far as I am able to gauge the opinions of the societies—I am speaking for my own society now—they seem to think that the whole thing would be repulsive, from the fact that anything in the form of Government State aid would involve Government supervision in some shape or other, which they think would be objectionable to the working of the societies, and remove to some extent their independent feature.
613. Do you think that the establishment of an old-age pension scheme, say at the rate of from 7s. to 10s. per week, would militate against the success of the Friendly Societies? That is a matter to which I have not given much consideration. The only objection we see to that is that perhaps the thrifty and provident men would be placed somewhat at a disadvantage. But I do not know whether it would affect in a general way the members of the Friendly Societies. The provident people join Friendly Societies with the view of providing independently for something of the kind.
614. But one of the main objects of the persons who join Friendly Societies is to get medical relief and assistance during the time of sickness? Yes, that is the chief object.
615. That would not be provided, of course, under a scheme of State pensions; therefore, all those who  
care

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H. H. Greene. care to work in the Friendly Societies with those objects in view would not be likely to be deterred from doing so by the existence of a State system of old-age pensions? No; taking that view of the question, I do not think it would seriously affect Friendly Societies, because, as you remarked, the chief object of a man in joining a Friendly Society is to provide for medical benefits.

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616. *Dr. Graham.*] Do you know anything about Canon Blackley's English scheme, and have you given any consideration to it? We have only casually examined it with the view of introducing a system of superannuation.

617. The Friendly Society authorities in England objected to Canon Blackley's schemes on the ground that it would interfere with their line of operations? I believe that view has also been advanced by Mr. Reuben Watson, as a member of the Manchester Unity, not as an actuary.

618. But the English Benefit Society authorities objected to Canon Blackley's scheme, chiefly on the ground that it interfered with their methods of work—with their function, in other words;—is that the objection you have to it? Well, no, we do not object to it on that ground, because we do not think it would really affect the Friendly Societies to a very large extent. It may affect them slightly, but not, I think, very largely.

619. But what objection would your people raise to it suppose it were initiated by the Government? If it were applied to the Friendly Societies themselves we should object to it on the ground of State interference with our affairs, as we object particularly to State subsidies for Friendly Society purposes.

620. Still, if it dealt with a social evil the Friendly Societies would be as much interested in the solution of that social question as anyone else? Well, there is not much sentiment in the matter, because ordinary co-operative societies do object to having their affairs interfered with by the Government, because they consider they are perfectly capable of managing their own affairs and disbursing their benefits according to their laws. We have committed errors of judgment, I admit, and the actuary has had to call our attention to certain irregularities in respect to provision made for proposed benefits; but these matters are now in course of adjustment, and I do not think they are likely to be a source of trouble to us in the future. I am speaking now for my own society only.

621. I did not hear whether you said just now that you dispensed a system of pensions in your Order? We do not call it by that name, and we arrange so that we can cut off the allowance at any time should any misconduct occur on the part of the recipient. In such an event the branches are at liberty to say, "We will discontinue this payment."

622. What is the scale? Five shillings per week.

623. Is that in some cases carried on for life? Practically so.

624. After disability, I suppose? Yes; we find that is one of the mistakes we have made. We find that our contributions are scarcely adequate to meet that expenditure.

625. So that you do not encourage it? It is still in operation, but it is rather more limited now than it was a few years ago.

626. Is it within the scope of your functions to some day aim at getting an old-age pension system in your Order? That scheme has been before us at our annual meeting for some time—that is, the principle of superannuation—but the difficulties that have arisen in connection with the actuarial view of the matter have suspended its serious consideration.

627. Could you give us any idea what the actuarial view of the matter was? The Friendly Societies, according to the actuarial view, have been carrying on their business upon scarcely sound principles, and their attention has been called to these matters on several occasions with such an amount of pressure that they have been forced to consider the situation. My own society, I know, has reduced its benefits very considerably on account of the pressure brought to bear by Mr. Coghlan, when actuary for the Friendly Societies. We fully realised that we would not be able to pay the prospective benefits. During the earlier years of our experience, of course, we were prosperous; but as years went on the liabilities of the society began to grow, and after a reference to other actuaries we found that Mr. Coghlan was correct, and we have attempted to readjust—in fact, practically we have readjusted our affairs on a different basis. Then there has been a suspension of the superannuation question, pending the adjustment of the actuarial conditions.

628. The type of man who joins your Order is not the type of man who eventually reaches the poor-house? No; our members are provident, as a rule.

629. Your society does not practically embrace the improvident class or the pauper class? No; not as a rule.

630. *Mr. Wilks.*] Have you discovered in your long experience that the objection to State pensions is based mostly on sentiment—on the fear of the stigma of pauperism if a State pension were accepted? So far as my experience has gone, that is the tendency. There is a repulsive feature attached to State aid when the principle of co-operation is introduced. The only thing is that men who usually form Friendly Societies do not give sufficient thought to the necessity for making due provision for the benefits they propose to give.

631. If the State decided to establish a voluntary system of old-age pensions, applying to everyone of a certain age, to which all were entitled on application, and which they could accept or refuse, how do you think it would work—I mean in connection with the societies themselves? I think if you were to ask the great majority of our members they would not refuse to take such a pension if it were given to them. We know to our own cost that very often they expect a great deal more than is even now provided for them.

632. You think that they would have a fear of admitting that they were paupers? That appears to be a repulsive feature in connection with such a system.

633. They would be willing to receive the pension, but not willing to ask for it? Yes; you may put it that way.

John Alexander M'Cubben sworn and examined :—

J. A. M'Cubben.

9 July, 1896.

634. *Chairman.*] What position do you hold? Grand Secretary of the Grand United Order of Oddfellows.

635. Have you, in connection with your society, any system by which you grant old-age pensions or superannuation payments to the members of your Order? We have not.

636. You have no method by which you relieve the older members outside the ordinary payments from your society? No.

637.

637. How do you think the members of your society would view a proposal to establish a State system of old-age pensions? I believe they would view it with very much disfavour.

638. What objections would they have to it? I can only speak for myself, but I would not be favourable to a State subsidy or State pension.

639. On what grounds? Because I do not believe the Government ought to fund everything.

640. Do you think the establishment of a system of State old-age pensions would militate against the operations of societies like yours? I am not prepared to say that.

641. Would it prevent men from joining such societies? I am not prepared to say that it would do so.

642. Do you think it would work detrimentally in any way towards the societies? I do not know as to its detrimental operation or otherwise, but I do not believe the members would be willing to accept it. I think they would decline to accept it.

643. Do you mean to say that they would decline to accept the pension if it were made general, and they were entitled to receive it as well as other people, after having contributed towards the taxation out of which it came? That might depend upon whom it was for—as to whether it was only for members of Friendly Societies or for the whole Colony. I have no knowledge as to how the system would be applied.

644. Your society is firmly established here, is it not? Yes, fairly well. There is a membership of about 10,000, with a value of about £7 a member.

645. *Dr. Graham.*] You have no old-age pension system now in force in your Order? No.

646. What system you have simply applies to sick relief? It is a system of sick pay which is continued, according to law, whether the member may be old or young.

647. But the sick factor is the essential factor? That is so.

648. You have no old-age people among them? There is no provision specially for old age.

649. *Mr. Wilks.*] I take it that your present opinion is that a State system of old-age pensions would have a tendency to destroy the independence of your societies? I am quite satisfied that it would destroy their independence. It would also bring in State control, and I know the members are utterly opposed to State control.

650. You think it savours too much of Continental legislation, and has not enough of British independence about it? Just so.

651. *Dr. Graham.*] You think it induces a feeling of pauperism among the people? Just so.

652. Which is a bad thing for the people? Yes; they will come to depend on it, and those who spend most will get most.

653. *Mr. McLean.*] Your objection is really founded on the belief that the State will assume some control over the Friendly Societies? I take it for granted that the State would do so.

654. Apart altogether from the Friendly Societies, have you any objection to urge against the Government providing State pensions for aged persons? Personally, I have an objection to State pensions in any shape or form, either to members of Friendly Societies or to others. I do not say that the aged, when they come to a condition in which they can do nothing for themselves, should not be provided for. At the same time I think that if a pension were provided for them they would, to use a common term, "go for it."

655. You think that all aged persons would claim the pension whether they required it or not? I take it for granted that they would not be able to claim it if they did not require it—that is to say, that there would be proper inspection and investigation. But I mean to say that if I knew there was so much lying by for me (say 10s. a week) when I reached the age of 65 years, I might not be so provident when I was 60 years of age, knowing that I would be taken care of, and would not starve.

656. Are there many members of your society who have reached the age of 65 years? Yes, a good many.

657. And are any of them in poor circumstances? No doubt there are some, and there are also young members who are in poor circumstances.

658. But you have a number of aged persons who are in poor circumstances because they are unable to work? Yes, I have no doubt we have.

659. Have you any benefit fund for the relief of cases of that kind? There may be some benefit fund in connection with some of the branch societies, but there is none in connection with the head organization—that is to say, we have no benefit fund established.

660. Have you been brought into contact with any aged persons in poor and distressed circumstances in connection with your own Order? No, not particularly.

661. Are you of opinion that the majority of the members of Friendly Societies are provident people who do not require the kind of relief contemplated under an old-age pension system? I am of opinion that the members of Friendly Societies generally are provident, and do not wish to partake of such State relief.

662. And you do not think that a very large proportion of them are in absolute poverty in their old age? I do not.

663. *Dr. Graham.*] You think that very few of them ever reach the poor-house? I am not aware that any have done so; it has not come under my notice.

664. And you have been a long time in the Order? Nearly forty years.

665. Is there a certain rate of contribution per week or month which the members of your society are expected to pay in order to retain their full membership? There is a graduated scale of payments. A young member from 16 to 20 years of age pays 7d. a week. I am only speaking now of the payments that would provide sick benefits and funeral donations. The scale then increases at different intervals of age until the contribution reaches 1s. a week. Then, if the contingent expenses were 8d. per week that would be 1s. 8d. for that member. That would apply to the highest age at which members are accepted. We do not take members in—at least, we are not supposed to take them in—over 40 years of age.

666. When does the rate increase from 7d. per week? Over 20 years of age they pay 8d.; at 25 it is raised to 9d.; at 30 to 35, 11d.; and from 35 to 40 it is 1s., which is the maximum—7d. being the minimum.

667. Do they continue paying the shilling rate as long as they are members? Yes; but they pay the shilling in consequence of their coming in at an older age.

668. Have you ever had any calculation made as to the average amount your members pay in a given time—say, in twenty or thirty years? I have calculated it, and I have always found that the member is the gainer.

669. Suppose a young man joins at 20, and remains until he is 60, how much will he have paid in that time?

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time? I should say about £45. I am only speaking now of sick benefits and funeral benefits. That does not include medical attendance and medicine.

670. The member pays extra for these? Yes.

671. Do your members, as a rule, stick to the Order? We lose large numbers, as is the case, I think, with every other Order, judging from the returns I have perused.

672. You say that the average contribution from each member as soon as he becomes a member and pays up to 60 is about £50? Yes; you might put it down at about that.

673. *Mr. Wilks.*] Do you approve of our present system of sending cases of absolute destitution to the large asylums? I prefer the cottage or almshouse system to the asylums.

674. What do you think of an old-age pension system which proposes to maintain old couples in their own homes? Just before coming to the Committee I read something about the system proposed to be introduced in New Zealand, where it was proposed to give them 10s. a week. That would not be much use in placing them in their own homes. Possibly we might be more liberal in New South Wales.

675. *Dr. Graham.*] A member of your society entering at 20 years of age, and beginning with a contribution of 8d. per week, and continuing in the society until he was 60 years of age, would pay a total contribution of £69 8s.? That may be so. When I said £45, I spoke without having had time to make the calculation.

676. Supposing he paid the sum that he now pays weekly, and got no sick benefit, do you think you could give him a pension of the amount of 10s. a week at the age of 60 years? I have not calculated that out. It has not struck me in that way, because I believe people would be very unwilling to make such payments in prospect of a pension at a remote age.

677. They want something tangible for their money? Yes; they want something now—they do not want to wait too long.

678. *Mr. McLean.*] As a matter of fact, they pay for sick benefits during their membership in the lodge, and do not look forward to an old-age pension? That is so. There are opportunities now in connection with our society for participating in a fund, which members simply scorn, though the contribution is only 4s. per annum, and the payments very liberal in proportion.

679. *Dr. Graham.*] What do they get in prospective? The payment on death is £10 in case of a membership of five years, and £20 for a membership of ten years. Still members do not avail themselves of this opportunity.

680. *Mr. McLean.*] They avail themselves of the benefits that are immediate, and do not look forward to the distant future? That is so.

681. *Dr. Graham.*] You think that if you were to initiate in your Order a weekly-payment system to provide for an old-age pension above 60 years you would get very few to contribute to it? Very few indeed. At our last bi-annual meeting, fourteen months ago, there was a proposal for the establishment of an insurance fund, and there was then a prospect of a conference of members from the different colonies, which took place last September. Some evidence was placed before us concerning the insurance fund, as it is worked in America. For my part, I declined to take any active part in getting the thing up, because it did not look a very good scheme, in my opinion; but I contend that members do not want more than they already have, until they show that they are willing to avail themselves of the present opportunities.

Matthew Prideaux called in, sworn, and examined:—

M. Prideaux,  
29 July, 1896.

682. *Chairman.*] What position do you hold? Grand Secretary of the Manchester Unity Order of Oddfellows.

683. Have you, in your Order, any system of old-age pensions, or any means by which you superannuate the old members? No.

684. You give nothing more than the ordinary benefits for sickness and death? That is all. The sick pay commences at 21s. per week for the first six months, 15s. per week for the second six months, 10s. per week for the third six months, and 5s. per week afterwards.

685. Then the member receiving sick benefit is entitled to 5s. per week so long as he is sick? Yes.

686. But you make no provision for an aged member who may not be sick, but still be unable to do any work? No. But I may state that this question will most likely be brought forward at our next annual meeting. It was discussed at the last annual meeting, held at Bathurst, and our directors were instructed to prepare a scheme to be submitted for consideration at the next annual meeting, which will take place in May next year.

687. The Manchester Unity Order in Great Britain have expressed themselves as favourable to old-age pensions, have they not? To my knowledge they have had that question before them for some years. I have here a copy of the *Bristol Times and Mirror* of the 30th May last, which contains a report of the annual meeting of the A.M.C., held at Bristol, from which it will be seen that the question of State-aided superannuation was discussed, with the result that it was decided by a majority of forty-seven, the total number of delegates being 611, that the Order might receive State aid, but on no consideration would they allow State interference. I gather this conclusion from the speeches made during the debate. The resolution submitted to the meeting by Brother Cardew (London) was as follows:—

That, inasmuch as under the general rules of our Order, it is illegal for lodges to grant sickness pay to members who are incapacitated through the infirmities of old age, and it being admitted by the highest authorities to be a practical impossibility to provide a superannuation allowance for such members, they are left dependent on the kindness of relations and friends, or on the parish authorities, for their subsistence, this A.M.C. is of opinion that any well-considered and suitable scheme propounded by the legislature, having for its object the relief of the aged and infirm, which would have the effect of benefiting our unfortunate brethren under conditions that would not degrade the recipients, and be less repulsive to our common humanity, than the present poor-law system (without interfering with our independence and self-control) would be welcomed by our members, and receive the hearty support of our Order, and that the Board of Directors issue voting schedules to every lodge for the purpose of obtaining the votes of the members for and against the proposals.

An amendment to that resolution was proposed, and, after discussion, a vote was taken on the question for or against State aid, with this result: For State aid, 283; against, 248; majority for, 35. A vote was afterwards taken by districts, 290 delegates voting for State aid and 243 against, showing a majority of 47. Eleven delegates voted neutral, and 67 were absent, making up the 611 deputies to be accounted for.

688. So that you may say that the voting was fairly equal? Yes. This has been a subject of controversy in

in our society in England for years. It has been brought forward at our annual meeting in England for several years. M. Pridaux.

689. Has it been brought forward in a practical way;—has there been any special scheme proposed? 29 July, 1896.  
No. Mr. Reuben Watson, who, I suppose, is one of the best actuaries in the world in connection with Friendly Societies, has laid down tables in the English laws for providing certain weekly sums, but the members have not availed themselves of these tables. Then, again, at our last annual meeting in this Colony, held at Bathurst, we passed the following resolution:—

That the G.M. and Board of Directors be empowered to formulate a scheme for superannuation benefits in connection with our Order, and submit the same at the next G.A.M.C.

690. *Chairman.*] Do you think that the rates of contribution now paid by your members will be sufficient in the future? I think not. What is killing nearly all the lodges is the system of continuation of payments. My private opinion is that cases of permanent blindness, permanent insanity, and permanent infirmity from old age should not, strictly speaking, receive sick pay, although that has been the custom.

691. Your contention is that the prolonged payments to members is too great a strain upon the fund? Just so. I will give an example taken from my own lodge. At the present time we have two cases where the lowest contribution of 5s. a week is paid as sick pay. It takes eleven members' contributions to support one of these cases. Therefore, in my own lodge, to support these two members it takes the contributions of twenty-two members to the sick fund. Then, again, if there is a man who is on full sick pay it takes the contributions of forty-six members to support him.

692. Then, it is very evident that with your present rate of contributions it would be impossible for your Order to sustain a system of old-age pensions? There would have to be special payments. A scale was laid down by Mr. Coghlan as sufficient to meet probable sickness, and, if we established a superannuation fund, our members would have to pay an additional contribution. In connection with our Order a superannuation fund was established in Queensland. But there were separate payments made voluntarily, and the consequence was that it was a failure.

693. *Dr. Graham.*] How many actually joined? I could not tell you. In a communication received from the Chief Secretary of the Order that gentleman said the system was a failure. He said, "We have tried superannuation, and it is a failure." If such a system were made compulsory the chances are that you would get no one to join the societies. The contributions of a working man to his society are quite sufficient at present.

694. *Mr. Wilks.*] What is your opinion as to the necessity for State pensions in this country? My opinion is, as far as our society is concerned, that we would rather work it by ourselves, without any State interference whatever.

695. Then I understand that you are afraid that the providing of a State pension would weaken the force of the Friendly Societies? It would weaken their independence; it would make them paupers.

696. That is the sentimental objection; but do you think it would also weaken them in the sense of material strength, such as the membership of the lodges. If men knew they had a State pension coming to them, would they neglect to join Friendly Societies for other benefits? That might possibly be the case; I could not say. But as soon as the State interfered with Friendly Societies it would weaken their independence, and I think our society would object to any such thing as interference by the State.

697. Your society is rather a powerful body in this country, is it not? Yes; we are at the present time worth £12 16s. 10d. a member, and our numerical strength is something like 17,400 in New South Wales.

698. *Dr. Graham.*] Have you ever felt any need in your Order for such a fund as a superannuation fund? I never saw any great need for it, but there is no doubt it would become very acceptable to a certain class. For instance, in my own lodge we have a member who is blind, but who, otherwise, as far as his constitution is concerned, is as healthy a man as we are. There is no doubt that to a man like that it would be acceptable.

699. How does he live? We give him 5s. a week.

700. But that does not keep him? Certainly not.

701. How does he make it up otherwise? I cannot say; his family are grown up.

702. If you did not give him 5s. a week, what would he do;—would his family keep him? I could not say.

703. Do you think many of your people ever reach the poor-house? I do not know that any reach the poor-house while they are members.

704. How many years have you been in the Order? Over 20 years.

705. You have never had any appeals from old members who have left the Order begging for some assistance, otherwise they would go the poor-house? Members have applied to their own lodges for distress gifts.

706. On the whole, the members of your Order are a provident class of people? Yes. It will be admitted that, on the whole, the members of Friendly Societies are the most provident of the working classes. We have had members who while receiving the 5s. sick pay have also been receiving something from the Benevolent Asylum.

Thomas John Iredale called in, sworn, and examined:—

707. *Chairman.*] What position do you hold? Grand Secretary of the Protestant Alliance Friendly Society of Australasia. T. J. Iredale.

708. Have you in connection with your society any system of old-age pensions or superannuation payments? No, nothing of the kind. 29 July, 1896.

709. What benefits do you give contributors? The sick benefits are 21s. per week for the first six months, then 15s., and afterwards 5s. a week so long as the sickness continues—it may be for six, eight, ten, or twelve years.

710. And I suppose there are certain fixed payments at death to the widow and children? Yes; £15 on the death of the wife, and £25 for a member of twelve months, and after he has been associated with the organisation for five years he is entitled to £30. That is the outside limit of the funeral donation.

711. Have you given any attention to the question of old-age pensions? The matter has never cropped up in connection with our legislation for the institution.

- T. J. Iredale. 712. Do you think it would militate against Friendly Societies generally if such a system were in vogue? I do not think it would be acceptable to the general body of our members, judging from past experience in connection with the organisation.
- 29 July, 1896. 713. *Mr. Wilks.*] Do I understand it would not be acceptable from fear of State interference? I think that would be one of the objections, and also possibly because they would feel that it was pauperising the institution.
714. You are afraid that the stigma of pauperism would attach? The institution of Friendly Societies naturally involves thrift on the part of the members. That is the backbone of these institutions.
715. Have you had any experience to enable you to form an opinion favourable or unfavourable with regard to the present system of maintaining destitute persons in asylums? I have had no experience to enable me to express an official opinion.
716. What is your personal opinion? It is unfavourable to such a system.
717. Suppose a system of State-aid pensions were introduced applicable to the whole of the people above a certain age, who would receive the pension merely on application, do you think it would be availed of? I think it would in some cases, where men were not thrifty, and would know that at a certain age they would be able to draw a pension from the State.
718. You think it would be liable to be abused? Yes. Malingering takes place even in our societies.
719. *Dr. Graham.*] The bulk of your people are thrifty people? Yes.
720. We have it in evidence that in connection with one large Friendly Society when a system of superannuation was initiated no one would contribute, and it was a failure. Evidently even thrifty people in that case had difficulties in the way of looking forward and providing for a pension;—do you think that would be the experience with your people? Yes, I should think it would.
721. They do not like to provide for a distant date? No. I was looking over some of the Victorian statistics on this subject, and I think it would, perhaps, interest the Committee if I read the following:—
- One of the main objects for which societies may be, and have been, registered in Victoria is “for the relief or maintenance of members in sickness, infirmity, and old age”; but, when the lowest rate of sick-pay is payable until recovery, a member in receipt of the allowance is required to send at stated intervals to his branch a doctor's certificate declaring his continued inability to follow his usual occupation, which must thus be due to sickness alone, no provision having hitherto been made in any society to grant an allowance to aged members whose incapacity for labour arises from weakness due to old age or senility. The rules of the M.U.I.O.F. in England have, for some years, empowered districts to form a superannuation fund with a separate contribution thereto, whence a weekly sum might be payable to those members who reached the age of 65, quite independently of the state of their health at the time. In consequence of the remoteness of the benefit in the case of young members, however, and the probability of but few surviving to enjoy the pension, the scheme has not been popular, scarcely any members having assured under it.
- So that in a large Order of that kind in England they looked upon the thing as very remote, and did not subscribe to it.
722. *Mr. McLean.*] Have you any benevolent fund, or fund for the relief of distress among your members? Several of our lodges have benevolent or contingent funds.
723. Out of which they vote moneys for the relief of distress? Yes; but only those who contribute to the fund participate in the benefit.
724. From your knowledge of the societies and the members generally, do you think these cases of distress are mostly those of aged people? There are men who from fortuitous circumstances have become almost in a state of destitution, and they apply for relief, which is given from the benevolent fund or contingent fund.
725. You think no large number of aged persons seek relief from your funds, either by trying to get sick pay or by trying to get relief from the benevolent fund? Not many have come under my knowledge.
726. Have you very many old members in your Order? I could not give the aggregate number of members over 50 years of age, but it is proportionately small. Our average, I think, is under 35.
727. How long has the Protestant Alliance Society been established? Since 1872.
728. You have not the same age and experience as some of the other Orders—your members have not aged so much? No.
729. *Dr. Graham.*] Do you limit the age at which you take members? At present we do; we do not take them over 40. We have a graduated scale now in operation approved of by the Registrar. It has been in operation for two years, and members pay in proportion to their age. It may be from 1s. 2d. up to 1s. 8d. per week.
730. I suppose all these Friendly Societies have a uniform rate? No; that is what we want to aim at.
731. Do they not give uniform benefits? No; the Manchester Unity goes as high as £50 funeral benefit.
732. But the sick benefits are uniform? There are three scales of payments. We have a lodge relief fund from which weak lodges are assisted by the Grand Lodge to enable them to tide over difficulties arising from a heavy drain of sickness. We advance £10 or £20, as the case may be, until the lodge is again in a financial position.
733. *Mr. McLean.*] Really the lodges have to paddle their own canoe, as far as the sick fund is concerned? Yes.

John Hampton called in, sworn, and examined:—

- J. Hampton. 734. *Chairman.*] What position do you hold in the Royal Foresters? Chief Secretary.
- 29 July, 1896. 735. Have you in connection with your Order any system of old-age pensions or superannuation allowance? No, we have not.
736. *Dr. Graham.*] Is your Order a very old Order? It was established about 1845, but at first it progressed very slowly. Formerly it was in connection with the English Royal Foresters, but for many years it has been a New South Wales society.
737. What is its present strength? About 1,800 members.
738. Are there many old people in it? There is a reasonable number of old people in the oldest courts.
739. I mean over 60? Yes, over 60.
740. *Mr. McLean.*] Have you any idea of the proportion of men over the age of 60 in the lodges or courts? I should say 10 per cent. at the least.
741. Do you find more claims from the fund from these older members? No, not as a rule; if they get to the age of 45 we consider that the worst is passed. We have more sickness among those under 45 years than among those above that age.

742. *Mr. Wilks.*] Have you considered the question of old-age pensions? It has not been discussed in our grand lodge, but some of the members have casually seen it mentioned in the newspapers. The nearest approach we have to old-age pensions are those cases in which the doctors place upon the fund old men who are not positively sick, but are too old to work—men suffering, for instance, from senile decay. Our sick pay is intended only for those who are actually sick, and the rule says that the doctor shall state the nature of the complaint. J. Hampton.  
29 July, 1896.

743. *Chairman.*] How would your members generally view a proposal for State old-age pensions? I could not answer that question, unless the subject had been discussed amongst us.

744. Do you think it would militate against the interests of Friendly Societies? Personally, I do not think it would.

745. Would it affect them in this way—that when men knew they were entitled to an old-age pension from the State they might not be inclined to contribute to Friendly Societies? I do not think that would hinder them. It is the provident men who join Friendly Societies.

746. You think then they would join all the same for the sake of the sick benefits and funeral donations? Yes; our benefits are very great. They run up as high, after a number of years, as £45 for a man alone, and for the wife £15. We are responsible to some men for £60, and that is a large insurance.

THURSDAY, 30 JULY, 1896.

Present:—

DR. GRAHAM,		MR. O'REILLY,
MR. MCGOWEN,		MR. SCHEY,
MR. WILKS.		

E. W. O'SULLIVAN, ESQ., IN THE CHAIR.

James Maxwell Main called in, sworn, and examined:—

747. *Chairman.*] What position do you hold? That of city missionary.

748. Where are you stationed? In Waterloo and Alexandria.

749. Do you merely attend Waterloo and Alexandria, or do you cover the whole city? That is my district. J. M. Main.  
30 July, 1896.

750. *Dr. Graham.*] But you know the other districts too? Yes; I have been in the other districts. I have visited round with the other missionaries. We interchange from time to time, but we all have special districts given to us. I have been in my present district for fourteen years without a break.

751. *Chairman.*] Can you give us an idea of the amount of poverty and distress that exists in that district among persons likely to be benefited by a system of old-age pensions? I may say, in the first place, that it is a working-man's district, and we necessarily have a very large proportion of the excessively poor, and a large proportion also of men who have made no provision for old age. Various causes have, of course, contributed to that condition. There are steady, sober, hardworking men who have not been able to make provision for old age, owing to various causes. They have fallen sick, or got out of a lodge, or perhaps have not gone into a lodge, and, striving against difficulties, old age comes upon them, and finds them quite unprepared for it, without indulgence in drink or extravagance on their part. I come across a very large number of men of that description.

752. Do those persons receive any relief at all from the Government? Not the class of whom I am speaking now, except when old age comes upon them. I am talking of men who are gradually getting towards old age, and who are just in that state that they have been unable to make provision for themselves. People of that class, if they have any family at all, always make a great effort to keep out of the hands of the Government. I may say there is a strong antipathy on the part of the ordinary working-man to go into a Government institution. As a rule, only real want drives them to take a step of that kind.

753. Do you think there are many of those persons who would be benefited by the institution of a system of State old-age pensions? Yes, I think there are a good many; but I can see a danger in such a system. I know there is always a difficulty in dispensing charity at any time. There are degrees of want, and though you may see the degrees the people themselves fail to do so if they are the ones not benefited. There is the difficulty. There is always a certain class of people who, if their parents have to go into an institution, will strive to keep them out rather than suffer the disgrace of its being said that they are in the Parramatta or the Newington Asylum. But if it was made a legal matter, and they could get a pension, there are many who would unhesitatingly throw their parents on to the pension who would not seek such Government aid under existing circumstances.

754. If it were made a matter of right, and not a matter of pauperism, that class would be glad to avail themselves of it? There are, undoubtedly, a very large number who would do so. That is where I look upon it as a danger, because it might be overdone.

755. Have you given any attention to the question of old-age pensions? I cannot call myself a specialist in the matter, but I have thought it over like anyone else who is engaged in the work with which I am connected, and I can see that if such a thing were brought about equitably it would be a very great advantage to a large number of people. If it were possible to bring it about in a way that would safeguard the State from imposition, I think it would be a very great benefit; but as far as I have looked at the matter, that is where the difficulty lies—the difficulty of safeguarding the State from imposition.

756. I suppose what has been your experience of the poor of Waterloo and Alexandria would be pretty much the same as the experience of the other city missionaries in other parts of the metropolis, making allowance for a little difference in the character of the population? Yes.

757. *Mr. Wilks.*] You are afraid that under a system of pensions the State could be imposed upon;—what system of inspection would you suggest to counteract that? I do not know that I could give a straight answer to that, because I am afraid the matter has not been sufficiently threshed out to enable anyone to introduce a system of inspection that would give satisfaction.

758. Do you think the system of inspection would virtually kill the idea of old-age pensions—that is to say, the officialdom connected with it? It would always have that tendency.

759. What is about the average age of the indigent persons with whom you have to deal? About middle age. 760.

- J. M. Main.** 760. About fifty years? Yes; somewhere about forty-five or fifty. I think, if you refer to the Benevolent Asylum books, you will find I am pretty correct in saying that. I have sent hundreds of applicants to the Benevolent Society for relief.
- 80 July, 1896. 761. People incapacitated from working—very old people? I was referring more particularly to people who were in want—widows, wives deserted by their husbands, and people in distressed circumstances arising from sickness and infirmity of different kinds. I find that when people get up to about 60 years of age, either their own people make an effort to keep them, or they are sent to some of our homes. I do not think many very old people get help from the Benevolent Asylum, and that is the principal institution for the purpose.
762. At what age would you suggest that the pension should begin to operate? I think you would be safe to fix it at 60.
763. Have you considered the amount of the pension to be allotted? The common talk has been 10s. a week.
764. Have you no idea of a graduated scale? No, not particularly. I think you would have a difficulty in bringing about a graduated scale. I think your difficulties would commence if you started that. While I have sent a great many to the Benevolent Asylum, I have given a great deal of help privately, and it is one of the most difficult things imaginable to give satisfaction in dispensing charity when you have to discriminate. For instance, take half a dozen families in a street. You take three out of those, and you give them charity. The other three, you think, are not so badly off. But they get to know that you have given the other three charity, and they come at you, and they say, "You have given so-and-so help, and we are as badly off as they are," and you cannot convince them that they are not as badly off. There is the difficulty.
765. Therefore you would be in favour of a uniform rate? Yes, I think so.
766. *Dr. Graham.*] Have you been long engaged in mission work? Fourteen years.
767. Chiefly in the district of Waterloo and Alexandria? Always in that district.
768. Have you had any experience of similar work in other countries? No.
769. Have you any practical knowledge of the conditions of the poor in other countries? No. I have not been engaged in the work elsewhere.
770. Are you a native of this Colony? No; I am a native of Scotland.
771. From your knowledge of the conditions of the poor, such as you have seen them, do you think they are in a worse plight, from the point of view of poverty, than the poor that you have seen in other countries—Scotland, for example? I would answer, yes and no.
772. What part of Scotland do you come from? Ayrshire.
773. Do you know anything about Glasgow? Not much.
774. Edinburgh? I have been in both places, but I cannot say that I have any practical knowledge regarding the state of the poor there.
775. You have never gone systematically into the poorer districts? No; I was young when I left.
776. You speak of giving charity to the people of your district;—what form of charity do you give? Orders for groceries, and sometimes a little money, but in the latter case you have to be careful—you want to know with whom you are dealing.
777. Where does this money come from? It is given voluntarily—sometimes through our General Secretary, sometimes it is given to us personally. Sometimes I can take the liberty of giving a family an order on a grocer or a butcher. I have that discretionary power.
778. Do you give sums of money systematically to any destitute families? No.
779. You do not maintain as a matter of routine any old people? No; we allow the institutions to do that, such as the Benevolent Asylum. We send on persons with whom we cannot deal ourselves to institutions that lay themselves out for special things. For instance, I send a number along to the Nurses Institution in Hay-street, to the Benevolent Asylum, and to places of that kind. Where we can deal with them without sending them to the benevolent institutions we do so.
780. Are the homes of these poor people very bad—do they look very poor? Many of them do.
781. For example, I have visited hundreds and thousands of destitute homes in different countries in the world, and I have found many without a bed, and without a chair;—do you find such homes here? Yes. I have sometimes said this, that while we have not got the filth and degradation in our community, we have in a number of instances a condition of poverty that cannot be exceeded anywhere.
782. Could you describe such a house? Yes; a house without a chair, without a table, and without a bed in it—*sans* everything, the inmates sitting on boxes and kerosene-tins, and lying on the floor. They are not numerous, but we do come across cases of that kind.
783. Are such houses often inhabited by old people? No, not by old people as a rule—by middle-aged people, who have either been brought down to that state by sickness, by getting into debt, or getting behind with the rent, and who have been sold out, and sometimes drink has brought them to it.
784. An old-age pension is not supposed to reach persons of that class, but is intended for old age;—are many homes of that sort inhabited by old people? No; and I think I can give you a reason for that. There is an amount of charity, and a disposition to help amongst the people in the city and suburbs that when they know of old people in that state they will come to their assistance. There is a great deal of Christian sympathy and charity brought together apart from our institutions. I will give you one case that will illustrate a number. It is that of a family who had lost everything through the man taking ill. Everything was sold off partly for rent, I believe, and they were without furniture and without bedding. All I had to do was to mention the case to a number of people, and they at once provided the necessaries without having to send the people to an institution.
785. But the old people—not the particular family you have just mentioned—want some systematic pension from week to week and from year to year;—do they get that? The old people can always make sure of getting help, if they are incapacitated, from the Benevolent Asylum, and not from private sources. People will make a spurt to provide them with some particular things, such as furniture or clothing, but the systematic relief must come from the institutions. You cannot get that from the public. When it comes from the public it comes spasmodically.
786. *Mr. O'Reilly.*] You have said twice, in answer to Dr. Graham, that these old people are referred to the Benevolent Asylum for assistance? That is where they have no one they can depend upon to keep them.
787. But in answer to Mr. Wilks you said that very few of these old people go to the Benevolent Asylum? I do not think my statements were contradictory in that respect.

788. Very few are sent by you to the asylum? As far as my knowledge goes there are not very many old people at the Benevolent Asylum. J. M. Main.  
30 July, 1896.
789. And I think you also said that in normal cases these old people have relatives or friends to stand by them in their declining years? Yes, as far as my knowledge has gone. Fuller information in this respect could be obtained from the Parramatta and Liverpool Asylums.
790. Those who go to these asylums do not come from that normal class of people whose incapacity for work is due simply to their increasing age and infirmity? No, I do not think they do.
791. What class do you think these asylums are generally recruited from? Wanderers, I think, as a rule.
792. And wanderers, I suppose, are men who have been wanderers more or less all their lives? Well, I think so pretty well, though, of course, there will be exceptions.
793. You spoke of certain cases in the city which, I have no doubt, came under your personal knowledge, where people were living in a state of absolute destitution, *sans* everything, sitting on kerosene-tins, and so on;—do you not trace the majority of those cases to some external cause? Yes; in the majority of cases I think that drink has to do with it. Of course, there are exceptions.
794. And in those cases would there be a resident breadwinner with the family, or would they be cases of deserted families? Both. Sometimes the man has been sick, though, perhaps, only temporarily, and things have gone behind with them.
795. From the contact you have had with paupers—to use a somewhat harsh term—over the age of 60 years, your general experience is that where they have been honest and hardworking during their life they have friends to take care of them, and where they have been otherwise they go into asylums, and must go into asylums? Where they have no friends to take care of them.
796. That seems to suggest that the asylum is an evil necessity that must always be with us? Unless we can bring about a better state of things. These people look upon it as an evil, and they do their best to keep out of it. I will give a case in point. There was an old couple living in one of the lanes at Alexandria. The man had been a compositor, and some few years back he got out of work, and things went behind with him. I used to give them a little help, but, of course, I could only give it spasmodically. The difficulty is in such a case to give it regularly. One morning I went down to this man and saw him before he went out on his tramps, and I said, "Look here, I will give you a letter to the Benevolent Asylum." "But," he said, "I am just going over to Balmain to answer an advertisement; they want some compositors over there." He was putting me off so that I would not be in time for the asylum. So I said, "You can go to the asylum when you are coming back," and so I drove him into a corner to get him to take the letter down to the Benevolent Asylum, and when I had him fairly cornered, and he was sure to get there if he liked, he turned round and said, "Look here, I would rather go out and die in the street like a dog than go to the Benevolent Asylum and ask for help." In saying that he voiced the sentiments of a number of others whom I have come across. It will be understood that I am not reflecting on the asylum, because they are doing a power of good, and meeting a lot of genuine cases of distress; but I am giving you an instance of what I have experienced with that class of men. He was an old man, and his wife was also old—they are both dead now—but he never went to the asylum. He managed to call on his friends and acquaintances, and by a little bit of quiet begging in that way, having no children, they managed to eke out a living.
797. Being a respectable man he was able to keep out of the asylum? He did keep out of the asylum.
798. You are speaking of the universal prejudice that exists in the minds of all people against what is termed pauper relief? Yes; there is a very strong feeling against it. If any plan could be adopted by which people could claim such relief as a matter of legal right, I am sure it would be of very great benefit to many deserving old people.
799. *Dr. Graham.*] Would you say from your experience that, in your opinion, the poor in this city have as hard times as have the poor elsewhere? Just now, perhaps, it may be so.
800. But this may be an exceptional time? It is a very exceptional time.
801. Would you say that on the whole the poor of this city have a better time than is the case elsewhere? Yes, a long way; anyone who has lived in Scotland must see that.
802. Have you visited the asylums for infirm and destitute persons and seen the working of those institutions? Yes. I have been to the Parramatta Asylum. I have not been to the Liverpool Asylum.
803. Would you say that the old people in the Parramatta Asylum are much better off for physic and surrounding comforts than are poor people in their own homes? I daresay they are. That idea impressed me—that they were very comfortably taken care of; but you know there is something more than that wanted—and that is what we really want to get at—to remove the stigma of going in as a pauper. It is not altogether a question of comfort. You may throw a leg of mutton at a man, and hit him with it, or you may throw half-a-crown at him, and he will take it as an insult, and if you give him sixpence in a kindly, pleasant way he will take it as a blessing. There is the difference.
804. Have you come across any genuine cases of extreme poverty which you could really say arose from old age? Yes.
805. You think that old age itself is a fairly common cause of poverty? It occurs from time to time—old age where the man has been unable to work, and where his old wife has not been able to go out and do any washing.
806. You think such a man may have been a temperate and correctly living man for the most of his life? That is a very hard question to answer. There are so many men who do not live a very temperate life, and so many men who take drink, that it would be difficult to answer that question.
807. Do you know a book, "How the Poor Live," by Charles Booth? No.
808. He draws a conclusion that a certain number of destitute poor people become so in consequence of their age;—from your experience, you think that is quite possible? Yes; there are a number of people who become poor because they have been unable to keep on working.
809. And who may have been correct living people? Yes; in the ordinary sense of the term—an honest workman, an honest woman, never got drunk, never squandered their money, but just lived as ordinary people lived.
810. Do you keep a record of each visit you make? We jot down at the end of the day so many visits made that day.
811. But you do not enter fully into the particulars of each visit the conditions of poverty, and so on? Only if a certain case strikes us as an interesting one.
812. Have you any such interesting cases you can tell us of with regard to old age and poverty combined? Yes; there is a case in which a man and his wife in Alexandria are living on charity in consequence of old age.

- J. M. Main.  
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813. What are their ages? I should have to guess, but they are above 60. They have no family, with the exception of a daughter, who is away from home. The old lady is beginning to get a bit paralysed, and the husband is waiting on her. They are getting help from the Benevolent Asylum, but not sufficient to keep them, and we manage to supplement it. I have two or three friends who call and see them, and I give them a little myself, just as I can, and so they are able to scrape along. But their poverty has arisen simply through old age. He is a decent old man, and I have known him for two or three years. I have seen no sign of drink during that time, nor do I think he is a likely man to have taken drink.
814. They would not go to the asylum? They will be compelled to go if they cannot be kept in any other way. It was suggested to him that they ought to go the asylum, and he came to me about it. I said, "You know I applied to get you into one of the cottage homes at Parramatta, but they were all full. To go into an asylum would mean that the Mrs. would have to go into the Newington Asylum, and you would have to go into either Parramatta or Liverpool. You will have to make up your mind to that." He said, "I should like to stay with her while she lives, if I possibly could." And I said, "We will make an effort and try"; and we have been trying to keep them there. If they are driven into an asylum it will be because we cannot keep them out. There is no desire on their part to enter an asylum; but, on the contrary, they would not like to do so.
815. If these old people had an income of 15s. a week between them, do you think they could live on in a little house? They could live on 10s. a week between them, and be happy.
816. And pay the rent and clothing? Yes; they would be able to manage. Old people like them do not wear out much clothing.
817. But they would pay at least 5s. a week for the house? No; the old man now has two rooms for 4s. a week.
818. Then that would leave 6s. a week for food and fuel? It takes very little to keep these old folks going. He is a very handy man, and does the sewing. She cannot do anything.
819. And you think the 10s. a week would put these people in affluence, comparatively? Yes, comparatively.
820. *Mr. O'Reilly.*] And being respectable people they would still have occasional assistance from friends around? Exactly; and I think that ought to be considered. I do not think it would be wise to overlook that.
821. *Mr. McGowen.*] Would 10s. a week be sufficient to keep such a couple as you have mentioned without any outside assistance? You put me in a bit of a fix there. I am not one who would be willing to screw old people down; but at the same time when you want to apply a principle like this you must apply it broadly, and that will mean that you will require to take in a great many more people than the Government or semi-Government institutions are dealing with at the present time, and it would not be wise to be too liberal to begin with. The family I have mentioned, if they were assured a payment of 10s. a week, would be in affluence compared with their present condition. They get 1s. 6d. a week from the asylum, and what provisions are sent. Then we give them what little we can to make up the difference between the 1s. 6d. and the 4s., and also a little clothing from time to time to keep them going. Ten shillings a week with a little assistance from friends, who would take a pleasure in helping, would keep an old couple like that in affluence compared with the way they are living now.
822. I gather from what you say that to keep such an old couple without any outside assistance would cost 7s. 6d. each? I suppose it would, without outside assistance. I am sure, considering the way these old people live, they could do very nicely on 15s. a week for the two, and in many cases, such for instance as the one I have just mentioned, they could do with 10s.
823. *Dr. Graham.*] The case you cited is that of a respectable old couple? Yes.
824. But there are many people who reach old age and who still retain their vicious habits, and for whose support 10s. or 15s. a week would be a mere waste of money? There are always very difficult families to deal with under any circumstances—people who have lived a vicious life, and who are still addicted to drink. My experience is that old couples do not live together much when they lead that kind of life. They seem to manage to separate. There is not sufficient cohesion between them to keep them living together. The woman goes floating about, and gets into Newington Asylum, and the man drifts into the Parramatta Asylum.
825. *Chairman.*] You used the words "our homes" just now;—are we to understand that the City Mission has certain homes to which the poor can go? No; we have no such institutions.
826. Did you mean the cottage homes at Parramatta? Yes; I should like to say a word about those homes. In thinking over the question of an old-age pension system it occurred to me that the object might be attained better if we proceeded by degrees, instead of trying to jump at it straight away. Could we not grow to it, so to speak? One of the methods might be to extend our present systems. For instance, take the cottages for old couples at Parramatta. Could not these be multiplied? They are wanted. Take the old couple I have mentioned. They want to get into a cottage home, and I cannot get them there, though I have applied two or three times, because the cottages are full. There are twenty of them, but 200 or 300 are necessary. If we were to extend the system, and take in a larger number of old people, and give them a living in that way, I think it would be possible gradually to grow up to the old-age pension system. But if an extension of the system were adopted, I think it would be unwise to put all the cottage homes in one place. I think it would be a better plan if ten or twenty were built in various parts of the city and suburbs. In that way there would not be the degradation that I fear would follow from so many being grouped together. I think it would be as great a mistake to have them all together as to continue the congested state of our existing asylums.
827. *Mr. Wilks.*] How about housing these old people with farmers in agricultural districts? If some plan of that kind could be adopted it would be a very good thing, and in that way you might gradually work up to the old-age pension system. By having ten or twenty cottages in different places you would avoid the congested condition which obtains at the present asylums, and you would give an outlet for private philanthropy. Many persons would like to visit these old people and minister to their comfort in various ways, and by placing them in different districts that could be accomplished.
828. They would live at a cheaper rate with the farmers? I daresay.
829. If a system of old-age pensions were instituted, the pension to be given as a matter of right, do you think the tendency would be that persons would transfer the responsibility for the support of their parents on to the shoulders of the State? That would depend partly on the lines upon which the old-age pension

pension scheme was drawn. If it were made to apply only to those who were in need you would find a larger number in need than is the case now, because the dread of going into a Government institution induces many to get their friends and children to support them, who otherwise would not do so. J. M. Main.  
30 July, 1896.

S30. *Mr. McGowan.*] Are you acquainted with the present system of boarding out State children with families, under which the children practically become one of the family, the State paying 5s. a week for maintenance? Yes; I know of that system, and it is a very good one.

S31. What do you think of that boarding-out system as applied to the old people to whom we have just been referring? I daresay it could be done very nicely. Of course, you would require to take care. The same difficulty would come in that was just mentioned—the children would throw the old folk on to the State if they possibly could.

S32. Do you think you could get people to take charge of an old man or old woman, as is done in the case of one of the State children, for a payment of 7s. 6d. a week? Everybody would not care about them—some would take them.

S33. You belong to a very large district with a population of the poorer classes with whom very likely these old people would be boarded out, and whose earnings would thus be supplemented;—what proportion of the people do you think would take these old men and women? I do not think you would find many in our city and suburbs who would care about taking them. I think it would be done more in the country places. Old people are very crotchety; they are not like children. I should not like to have an old couple in my house unless I knew them.

S34. Practically, you do not think the scheme could be worked out in regard to old people? Not in the same way as it is worked out in the case of children. It might be worth a trial. I believe in trying anything like that, but I do not think it would work out as successfully as the State Children's Relief system.

Joseph Aloysius Beattie called in, sworn, and examined:—

S35. *Chairman.*] What position do you occupy? I am Medical Superintendent of the Liverpool Asylum. J. A. Beattie.

S36. *Dr. Graham.*] How long have you held that position? Ten years next September.

S37. Had you previously held any other positions in the Government service? I have been in the Government service since 1878, and during that time have held the position of Medical Superintendent of Lunatic Asylums, and have served in the Little Bay Hospital and in the Immigration Department, besides holding the position I now occupy. 30 July, 1896.

S38. How many old men have you at Liverpool? Nearly 1,000.

S39. What is the average age? I should say about 50. We have a large proportion of hospital cases.

S40. You have some pretty young men in the institution? We have some at 22—from 22 to 106.

S41. So that it is not a poor-house for old people? No; it was originally constructed as an asylum, but it has undergone transition, and is now more of a hospital and less of an asylum. We have about 400 cases in bed constantly in our wards, of all ages.

S42. Of what diseases? General surgical and medical cases. They come to us from the metropolitan hospitals and from Little Bay, and isolated cases are sent in by the Government Medical Officer in Sydney.

S43. Why are they sent there, and not kept in the other hospitals? Their chronic character precludes them from occupying a bed in a metropolitan hospital, and they do not cost so much in one of our hospital wards.

S44. Do you think any of these chronically-ill people feel the stigma of entering an institution of that kind, which is partly a poor-house and partly a hospital? There is a sentiment of that kind entertained by some, and while it is to be deplored in reference to the minority who entertain it, I think it is a very salutary thing that a man should be ashamed when he has brought himself into the condition requiring sick and charitable assistance.

S45. But if chronic illness, especially of age, thoroughly incapacitates a man from earning a living, do you think it is a fair thing that he should be forced to seek the protection of the poor-house? I think it is compulsory in every country in the world.

S46. But does the sick element enter into the working arrangements of our poor-houses in England, Scotland, and Ireland? This is a benevolent asylum, and it corresponds in its functions in this connection with what we call county hospitals or infirmaries in Great Britain.

S47. Do you think it would be a good thing and a fair thing to establish in this country similar institutions to the county hospitals or infirmaries in England;—do you think it would give a distinctiveness to your institution? I do not know that I follow you; but I think that the establishment of small homes for aged people, male and female, in connection with our hospitals, such as the Parramatta Hospital—I mean the district hospitals—would be perhaps worth trying, to avoid the barrack system, which has many objections.

S48. What proportion of cases are there in your institution arising from causes attaching purely to old age—half of them? Yes, more than half; I should say three-fourths of them.

S49. Do you think that if these old men had any source of income, to the amount, say, of 10s. a week, they could be trusted to live outside upon that income. No. I am very positive in my opinion upon that point.

S50. Do you think any proportion of them at all could be trusted? There would be an exceptionally small number.

S51. How small—a fourth? No, I do not think so. I do not think there would be more than 10 per cent.

S52. Why would you be afraid to trust them to look after themselves on a small income? I think the sources of danger would be—first, their own incapacity to look after their affairs, and, secondly, the prevalence of that peculiarity in human nature which influences people to get the most they can out of the Government, and do as little as they possibly can for it. I do not think that any of our inmates in the Liverpool Asylum could get anything like the same degree of comfort, the same quantity of food, be kept with the same care as to change of linen, and have the same medical aid available, for 10s. a week or £1 a week; while there are cases of paralysis, rheumatism, and cases both medical and surgical, chronic cases—in fact, age itself is a disease, as Cicero says—in which I do not think £3 a week would procure for them an equivalent, as regards maintenance and comfort, to what they receive in the asylums.

- J. A. Beattie. 853. In other words, you do not think that any system of pensions could take the place of the present system of treating old-age paupers? I am quite satisfied on that point.
- 30 July, 1896. 854. On general grounds? Yes, on general grounds.
855. *Mr. O'Reilly.*] You spoke of the stigma that attaches to pauper relief as having a salutary influence in preventing people from presuming on the Government? Yes.
856. You also seemed to imply—in fact, I think you plainly stated—that a large majority of the inmates of these asylums get there through their own fault? Yes.
857. You said that, perhaps, not more than 10 per cent. were men who were forced into these asylums by circumstances over which they had no control? I did not quite mean that. I understood Dr. Graham to ask me what percentage could be trusted.
858. You said that not 10 per cent. could be trusted outside with an independent income? Yes.
859. That is to say, that not 10 per cent. would be able to look after themselves? Quite so.
860. Do you include in their incapacity drink and bad habits and extravagance, and so on? Principally drink.
861. And also illness and physical decrepitude? Yes.
862. To a large extent? Yes.
863. *Dr. Graham.*] The Director of Government Asylums told us that out of the 4,000 odd paupers now in the asylums a system of old-age pensions could be applied to between 500 and 600 of them—is that your opinion? I think it would be nearer the mark to say 10 per cent., knowing individually the 1,000 people in my institution at present.
864. Would you like to see the sick portion of your institution separated from the purely benevolent portion;—do you think it possible to do it? It is possible to do it, and it would be advantageous. But you will always have some of them getting sick day after day, and going from the hospital wards into the dormitories, and from the dormitories into the hospital wards. You will always have a certain current number going backwards and forwards.
865. I suppose you are familiar with the boarding-out system in connection with the State Children's Relief Department? Yes.
866. You do not think that system could be applied to old men? I do not think it is a parallel case.
867. *Mr. McGowan.*] Do you find any objections on the part of these old men themselves against the present barrack system? There are some cases where old fellows get discontented with being in the asylum, and when they are able to move about a little, and the weather is favourable, they think they can go out fencing or boundary-riding—some of them who cannot walk half a mile.
868. According to your system of work at Liverpool, I believe the inmates who are a little stronger than the others assist the warders in attending to the bed-ridden and consumptive patients? They constitute the wardsmen and deputy wardsmen under three or four paid attendants.
869. Then all the attendance is done by the old men themselves, with the exception of the three or four paid officers? Yes.
870. Do the inmate wardsmen raise any objection to attending to the consumptive patients? Some of them do.
871. Do they fear contagion? Yes. The average age of our wardsmen I should put down at 50. We have young men who come in with, perhaps, a heart affection, or perhaps a rheumatic affection of the joints, and who get better, and whom we improvise as wardsmen for a period of six or twelve months, giving them a little tobacco or a tot of rum in return for their services.
872. In your opinion, is there any danger of contagion from their attendance on consumptive patients? I do not think I should be warranted in putting a healthy man to sleep in a consumptive ward with a lot of consumptive cases.
873. As a matter of fact, you have very few healthy men there? I mean men without any taint of consumption—comparatively young men. If I employed such an inmate as a wardsmen, I should not oblige him to sleep in a consumptive ward where there would be (say) thirty or forty cases of consumption.
874. The people who attend on these consumptive cases, I gather, are men who have some symptoms of the disease themselves? Some of them.
875. The majority of them? Some of them are free from any taint of consumption, but their hours of attendance on the consumptive cases are limited.
876. *Mr. O'Reilly.*] And they do not sleep in the ward? No.
877. *Mr. McGowan.*] You also said that you would not like to put a healthy man in that position, because there might be a possibility of contagion? Yes.
878. Is there any danger under your system to the rest of the institution, inasmuch as nearly the whole of the patients are in the one building? Yes; there is a theoretical danger. For instance, if the desiccated sputum, or dried spittle, of a consumptive patient, having become pulverised, were taken into the air and deposited on the window-sills, the roof, or gutters of the building, and so got into the water, that, I should say, would be a very objectionable state of things.
879. Do you isolate your cancer cases? Yes.
880. Any considerable distance from the main hospital? I should say, quarter of a mile.
881. Would it not be better, according to your evidence, to isolate your consumptive cases? Certainly.
882. How is the attendance on the cancer cases conducted? The attendant at the present time is a clergyman's son. His father is a vicar in Yorkshire, and his two brothers are clergymen in England.
883. Is he a cancer patient himself? No. I do not think there is much danger of contracting cancer.
884. And yet you have isolated the cases at a distance of quarter of a mile? On account of the offensive character of the disease.
885. *Mr. Wilks.*] Do I understand that the trend of your evidence is that you consider the old-age pension scheme more or less a fad? Yes; that is exactly what I do consider it.
886. And if such a system were instituted you believe a large increase in impostures would occur? Certainly.
887. What is your opinion with regard to the cottage homes at Parramatta that we have heard so much of? I think they are very excellent things. I do not think they are absolutely necessary, because when people get old I think there is a danger of their becoming supersensitive in the matter of sentiment, and the class of people who benefit by these charitable institutions are not so very squeamish. Sometimes a husband and wife like to separate of their own free will. If they got the choice of living together in one of these cottages

cottage homes they would, by preference, go to different institutions—the woman to Newington, and the man to one of these asylums. I know of a few cases of indigent old people in Liverpool who would not take advantage of these institutions at all.

J. A. Beattie.  
30 July, 1896.

888. *Dr. Graham.*] Private citizens outside of the asylum? Yes.

889. *Mr. Wilks.*] Then you think the objection to the asylum or barrack system is merely sentimental? I think it is largely so.

890. And that sentiment soon wears off with residence in an institution? Yes; it does not last very long.

891. *Dr. Graham.*] Supposing your old men got the option to-morrow of remaining in the institution or getting 10s. a week to go and board out? I know the bulk of them would take the 10s. a week, but they would be back again the week afterwards.

892. *Mr. Wilks.*] You consider that the only practicable system of dealing with this class is by the maintenance of asylums? I am aware in a general way of the tentative efforts of philanthropists at Home and in Europe, but I do not think we have quite arrived at the stage when we could adopt such schemes here.

893. *Chairman.*] In your estimate of 10 per cent., did you intend that to apply to the 1,000 inmates under your direct supervision, or to the 4,000 scattered about in the various asylums? I restrict it to the 1,000 under my own supervision.

894. We have had it from Mr. Maxted that about 25 per cent. of the inmates might be boarded out? I do not think so.

895. Putting the inmates of your asylum aside altogether, and applying the old-age pension system to old citizens, do you think it would be a practicable plan to board them out with country residents, or residents in the suburbs, in the same way that State children are boarded out? No. I think that with regard to about 10 per cent. of the inmates of the Liverpool asylums I could select that percentage of decent old men who would conform to the ordinary usages of society, and who would be allowed into decent places to live in at a small premium, say, 10s. a week: but I am quite satisfied with regard to the remainder of the inmates that such a system would be disastrous to the individuals themselves, and to the people who took them in, and would be entirely unworkable.

896. You think, then, that if these old people were boarded out they would not be treated so well for their complaints in isolated positions as they are now in your asylums? I am perfectly satisfied of that. The typical old man would not be a desirable lodger. Some of them are weak in their loins and cannot hold their water, and they often have bleared eyes, and require medical and surgical attendance.

897. *Mr. McGowen.*] You are speaking from your experience as Medical Superintendent of the Liverpool asylums? Yes.

898. And, according to what you state, the bulk of your patients should go into a hospital for incurables? Yes.

899. The asylums at Rookwood and Parramatta are not on all fours with your asylum at Liverpool? No; we have a larger proportion of hospital patients among the inmates.

900. *Chairman.*] And those inmates you refer to would, no doubt, be more fit for an asylum than for outside treatment? Yes.

901. Putting those aside altogether, and dealing only with those who are afflicted with senile decay and minor complaints, do you think it would be better for them to live out in the bracing air of the country if they were well treated? Certainly.

902. Do you think an old-age pension system might be safely applied to cases of that character—cases not suitable for an asylum? I think it might be tried, and probably with advantage in the case of a small number.

903. *Mr. O'Reilly.*] You have had eighteen years' experience of this sort of work? Yes.

904. So that your experience has not been confined to hospital cases such as you now have under you at Liverpool? No.

905. Have you had experience in Parramatta? I have had experience in the lunacy department there, and in the general hospital at Little Bay, and I brought out 6,000 immigrants to this country.

906. And are you ready to go quite as far, if not further, than Mr. Maxted when he says, or rather implies, that 75 per cent. of the inmates of the Parramatta Asylum would still have to be cared for by the Government in the event of the remaining 25 per cent. being pensioned out? I quite approve of every word of that. That is exactly my opinion.

907. And even more? Yes; I do not think there are 10 per cent. of them. You would find that it would become very expensive to maintain these old men out of an asylum, on account of the frequent medical attendance, and so on.

908. *Mr. McGowen.*] Will you briefly state whether, in your opinion, the present system can be improved? I think, under the directorship of Mr. Maxted, we are improving the present system very steadily and very satisfactorily. There has been the greatest possible improvement during the ten years of my residence at Liverpool. There are a great many means of further improvement, and I think we are proceeding upon those lines.

909. *Dr. Graham.*] Have you any suggestions to make which you would like to see carried out as to fundamental changes in the system of dealing with your destitute old men;—do you think the present system is good? I am satisfied that it is very good, and that it will gradually become better under the present régime.

910. *Mr. O'Reilly.*] You stated that these old men now receive regular medical attendance and medical comforts in the asylums;—in the event of 25 per cent. of them being boarded out, they would require just the same medical comforts, would they not? I think you would find that the cost would amount to very much more than 10s. a week.

911. They would require the same comforts and attention and regular medical supervision that they get in the asylum? Yes. I think the barrack system is objectionable. I think that may be predicted of the system as it applies both to old age and to children, and I think the boarding-out scheme with regard to children is a very salutary one. But children easily ingratiate themselves into favour. We all feel the influence of childhood, and affection grows as a natural thing. In the case of old age it is repulsion that grows. The infirmities are so patent and increasing that people get tired of them, and especially out here. In these Colonies people get tired of their old parents very frequently. There are numerous cases where the relatives of inmates in the Liverpool Asylum deny them, and change their names, and all that kind of thing.

J. A. Beattie. 912. *Mr. Wilks.*] An old-age pension system would give such people a chance to still further shirk their responsibilities? Yes.

30 July, 1896. 913. *Dr. Graham.*] You are aware that there are many houses in the city and suburbs occupied by destitute old people who have a distinct objection to go to an asylum, and who are living in a condition of squalor and great misery;—do you not think it would be a fair thing, and a humane thing, for the State to give such people a pension of (say) 10s. a week? I think it would be proceeding on a wrong basis. I think a properly-conducted State institution ought not to bring with it any opprobrium. If I were reduced to indigence by disease or age, or any blameless cause, I should have no hesitation to seek the shelter of one of these places myself. Much better people than ever I was, or will be, have lived and died in them, to my knowledge.

WEDNESDAY, 5 AUGUST, 1896.

Present:—

DR. GRAHAM,  
MR. McLEAN,

MR. SCHEY,  
MR. WILKS.

E. W. O'SULLIVAN, ESQ., IN THE CHAIR.

David Carment called in, sworn, and examined:—

D. Carment. 914. *Chairman.*] What position do you hold? I am Assistant Actuary to the A.M.P. Society.

6 Aug., 1896. 915. The Committee would like your opinion in regard to old-age pensions, from an actuarial standpoint? I should be inclined to say that probably the most practical way of effecting any object of that sort would be to give a pension either to everyone in the community or to all who were proved to be necessitous on the attainment of a certain age, without attempting to charge anything for it, or to create a fund for the purpose, because, in the first place, if you attempted to create a fund there would probably be a great difficulty in getting the necessary payments from those who were not in constant work, and, in the next place, the fund, before many years had elapsed, would assume such enormous proportions that it would be costly and difficult to manage, and it would be difficult to invest the accumulations satisfactorily. That I think would be found to be a great difficulty. In Germany, where they have established a system of old-age and invalidity pensions, they embrace both sick pay before the attainment of superannuation and also a pension in old age. Then, again, there is the scheme which was advocated by Canon Blackley, in England, to the effect that every person in the receipt of wages should pay, some time between the ages of 18 and 21 years, the total sum of £10, which it was intended should provide them with sick pay while they were unable to work, and also with a pension in old age. But it seems to have been proved before a Select Committee of the House of Commons that the amount that Canon Blackley thought to be sufficient would not be adequate for the purpose, and no doubt various other difficulties would arise in working out the scheme. The scheme proposed by Mr. Charles Booth seems most nearly to approximate to what I understand is the idea of this Committee. His idea was that all the deserving poor should be provided with a pension in old age without being charged anything for it. Another scheme of which I have recently heard is in force in Denmark, where the tax on beer has been appropriated to give a pension in old age, subsidised partly by the Government. I do not know exactly how that is likely to work out. It has been stated that to give a pension to everyone of the population of England above 65 years of age would cost about £17,000,000 per annum, and I believe the cost for Scotland and Ireland would be about £6,000,000 more. Those figures, I think, are on the assumption that everyone would claim the pension. I have not before me just now the figures as to the number of the population in this Colony over 60 years of age. Some figures were given by Mr. Sutton, the actuary of the Friendly Societies in England, before a Committee of the House of Commons, appointed in 1891, in connection with a scheme proposed by the London School Board for the superannuation of their teachers, and Mr. Sutton there showed what it would cost to provide a pension at either 60 or 65 years of age. That cost would vary according to the present age of the person subscribing. It was estimated by Mr. Sutton that a pension of 5s. a week, to commence at the age of 65, would require a payment of 3½d. a week to be made continuously from the age of 20 up to the age of 65. A person starting at an older age than 20 would, of course, have to make a larger weekly payment for the same pension; and for a pension of 10s. a week the weekly payment would, of course, be double that just mentioned. That was on the basis of 3 per cent. interest, and I do not think you could rely upon any higher rate than 3 per cent. with safety. That did not include anything for the cost of working the scheme.

916. You say that in Booth's scheme the estimate of cost was £17,000,000 for the people of England only? Mr. Frome Wilkinson, in his book entitled "Pensions and Pauperism," says:—

Mr. Booth inclines to the view that any person attaining the age of 65 should be entitled, without a specific contribution, to a pension of 5s. a week for the remainder of his life. Adopting recent returns relating to the number of persons over 65 years of age in England and Wales, he estimates that a universal pension list would attain to the dimensions of £17,000,000 per annum.

It is stated that the cost for Scotland would be £2,500,000, and for Ireland about £4,000,000, the pension age being 65 years.

917. That would be a cost of £23,500,000 for a population of (say) 40,000,000;—could we not arrive at the cost with regard to this Colony by proportion? The cost for this Colony could be arrived at by ascertaining the number of people in the Colony over the age of 60 and 65 respectively. Mr. Sutton, the actuary of the Friendly Societies at Home, published in September full tables showing what was required to be paid at certain ages for pensions of different amounts. It was based on the mortality rates for the whole of England and Wales, and on a 3 per cent. rate of interest. There is also a calculation based on 2½ per cent. interest, which, of course, would require a larger payment for a given pension. According to Mr. Sutton's calculations, at the age of 30 years a payment of rather more than £4 a year was necessary to provide a pension of 10s. a week after the age of 60 years—that would be equivalent to 1s. 6d. a week. At the age of 20 the cost would be about 10d. a week. At subsequent ages the rates increase rapidly.

918. *Dr. Graham.*] Is there much difference where the pension begins at 65? Yes, there is a very great difference. In that case the pension would probably be paid for a shorter time, while the premium would have to be paid for a longer time. Sixty-five years seems to be the age mostly talked of at Home. According to the same tables, I find that at the age of 20, to provide a pension of 10s. a week, beginning

at

at 65 years, the cost would be a little over 6d. a week, and, starting at the age of 30, the cost would be about 10d. per week for a pension of 10s. a week to begin at the age of 65. There is little doubt that any scheme which depended for its working upon the exaction of contributions like these would be found to be impracticable, on account of the difficulty of getting the money from the people, and of taking care of it after it was received. I find that by the census of 1891 there were at that date about 48,500 persons aged over 60, the number over 65 being about 23,300. Allowing for some increase in these numbers during the last five years, I estimate that to provide a pension of 10s. a week to every one over 60 would require about £1,300,000 per annum; while if it were confined to those over 65, £780,000 would probably be sufficient.

D. Carment.  
5 Aug., 1896.

919. *Mr. Wilks.*] Then I understand that from your study of the question you are of opinion that if any system of old-age pensions were established it should be without specific contributions? Yes; I think that would be the only practicable way.

920. The difficulty being, in the first place, the collection of the premiums, and, in the next place, the investment of the accumulated funds? Yes; in the course of forty or fifty years the fund would become enormous.

921. And you believe that the pensions should apply to all or none—that it should be, as it were, a gratuitous system, of which the people might avail themselves? The question of whether you should offer the pension to everyone, rich or poor, is a difficult one, because, if that were done, the probability is that a certain proportion of the people would not avail themselves of the pension.

922. *Dr. Graham.*] As a matter of practical working of the various schemes put forth the best is that which applies to all? Yes, I should think so.

923. *Mr. Wilks.*] Under the other scheme it would be difficult to differentiate the necessitous cases and to determine what constituted necessity? Yes.

924. At what age do you think that in a country like this an old-age pension system should start? That is not a very easy question. In many occupations a man will be able to work until he is 65 years of age, or perhaps older, while in others he will not be able to do so. It is shown in Spender's book that men employed in some occupations rapidly fall off after the age of 45 or 50. On the other hand, in the case of clerks and others employed in indoor work, there is no reason why they should not continue working until 60 or 65 years of age, and possibly later.

925. *Dr. Graham.*] But in regard to the class of people who reach the poor-house, and who really come from the artisan class, their wage-earning capacity diminishes from the age of 45 years? Yes; but you could not provide them with a pension at that age. I should think, if you are going to do anything of the sort, your pension should begin at the age of 60 years.

926. *Mr. McLean.*] You say that the difficulty in connection with an old-age pension scheme would be with regard to the collection of the premiums. From your experience in connection with life assurance, can you say whether a very large proportion of those who enter into life assurance contracts in their younger days fall out through non-payment of their premiums? Yes; there are a very large number in these Colonies. I attribute that largely to the fact that, as we canvass actively for business, a good many people insure without sufficiently considering whether they will be able to keep up the payment of the premiums, and there is no doubt a great number relinquish their policies; but a large proportion of these insure again. They allow their policy to lapse in one year, and take out another policy next year or a few years afterwards. I do not know to what extent that is the case.

927. Have you any idea as to the class of people who neglect to make provision by life assurance. Do you think that the class we understand as the artisan class, as a rule, make this provision? We have in our office a very large proportion of the working classes who have taken out policies of over £100 and upwards. Of course, a large number of them insure with the industrial companies; but we have a very large number of policies effected on the lives of working men as low as £100. We do not assure for any sum lower than that. A large number of £100 policies have been taken out by railway men, miners, and artisans of all kinds, and a good many by ordinary labourers, though perhaps we do not get so many of the casual labourers.

928. You issue policies assuring amounts to be given at certain ages? Yes.

929. Is not 60 years the average age? No; that is rather beyond the average age. The average age at which these policies are made payable is from 50 to 55.

930. Do the working classes avail themselves very largely of these tables? Yes; to a considerable extent. Policies of that kind form half of our whole business now.

931. Policies maturing at about 55? Yes; some of them mature as early as 35, and some of them not till 65. The average would mature at 55 or earlier.

932. You do business also in the way of providing annuities? Yes; but we do not do much of that business.

933. Not many people avail themselves of that? Very few indeed. I suppose they consider they can do better with their money, or something of that kind, but we have very little annuity business. Many companies at home and in America do a large annuity business, but here there is very little of such business done. I do not think we have more than 200 or 300 annuity policies altogether at the present time.

934. That would seem to show that if people were left to make voluntary contributions to an old-age pension scheme it would not be largely availed of? That is quite certain. They would not avail themselves of it at all. It would have to be compulsory, or else it would be entirely futile. There is no doubt about that.

935. *Chairman.*] Do you think the establishment of a scheme of old-age pensions would militate against the business of provident institutions like yours? No, I do not think so. I should think that any pension the State could guarantee would be very small.

936. *Mr. Wilks.*] Have you considered the amount per week that would be required for an old-age pension in this Colony? The sum that was mostly suggested at home was 5s. a week, but that was considered by some authorities to be too little. I should think that in these Colonies, where food is cheap, a person could exist on 10s. a week, or less.

937. *Chairman.*] Or 15s. a week for a married couple? Yes. They would not get much comfort on that, but probably they might carry on existence. I do not think you could fix the pension at less than that.

William Roadley Dovey called in, sworn, and examined :—

- W. R. Dovey. 938. *Chairman.*] What position do you occupy? I am actuary of the Citizens' Life Assurance Company.  
 5 Aug., 1896. 939. Do you work any pension or superannuation scheme in connection with that society? Yes; we have benefits of the nature of old-age pensions.  
 940. Will you kindly explain them to the Committee? The company issue policies, payable by weekly payments, providing for endowments at the age of 65 years, coupled with assurance at death.  
 941. What is the rate of payment? There are three tables altogether, giving various benefits, the payments being 1d., 2d., 3d., and 6d. per week respectively.  
 942. For how long do the payments run? Up to the age of 65 years.  
 943. And do the policy-holders start to pay at any age? Yes. The present tables do not go beyond the age of 21.  
 944. And they pay up to 65? Yes.  
 945. And what benefits do they receive? The benefits vary according to the age at entrance.  
 946. Will you give us a few illustrations from the various tables? Entering at the age of 12 a payment of 6d. a week gives to the insurer an endowment of £135 at 65 years of age, with an assurance of £20 at death.  
 947. Could the endowment be converted into an annuity? Yes; they have the option of buying an annuity with it.  
 948. *Mr. Wilks.*] What would be the value of the annuity? About 6s. a week.  
 949. If they allow their payments to lapse can they regain their lost ground? If they discontinue their payments after five years they get a cash sum down. It is in the nature of a surrender value. After the policy has been a certain number of years in force they are entitled in addition to a cash payment to a paid-up policy. The payments are tabulated for each year of duration.  
 950. Will you give us an illustration showing what is done when the payments are discontinued? If the payments are discontinued after the policy has been ten years in existence the person receives £4 18s. in cash as surrender value. If the payments are discontinued after the policy has been twenty-six years in existence, there is a cash payment of £20, and a paid up policy of £46. If the payments are discontinued after thirty-five years, the cash payment is £20, and the paid up policy £44 10s., payable at the age of 65. If the payments are discontinued after forty-six years, which would be near the end of the time, there would be a cash payment of £20 as before, and a paid up policy of £70, payable at 65. The paid-up policy is graduated until the end of the period, when it nearly comes up to the amount of the endowment.  
 951. *Chairman.*] Do you find that your subscribers maintain their contributions? A certain number discontinue them.  
 952. What proportion discontinue them? Many discontinue after they have been only a few months assured. As a rule, the rate of discontinuance decreases with the duration of the insurance.  
 953. *Dr. Graham.*] Are these small payments collected by your society? Yes; they are collected from week to week by special agents.  
 954. That adds a good deal to the expense? Yes.  
 955. Do you pay the collectors a commission or a salary? We pay them a commission.  
 956. *Mr. Wilks.*] Is it a costly system? It is naturally more expensive than if the premiums were paid at the office. We should give the same benefits at a less cost if the premiums were paid at the office. We have a branch in which that is done.  
 957. You practically dun them for it now? The collector has perhaps to call once or twice, when they may not be in. Very often two calls are made for the same 6d. or 3d. or 1d.  
 958. Do you find this system of insurance becoming popular with the industrial classes? The company has issued about 13,000 policies under these tables alone, and have in existence about 180,000 under all tables—not in New South Wales, but throughout Australia.  
 959. How long have these tables been in operation? The tables in question have only been about nine or ten months, but the other tables have been in force for varying periods up to ten years.  
 960. *Dr. Graham.*] Suppose you did not have the collector system, do you think you would have the same number to come forward and voluntarily submit to this method of providing for their old age? No, I do not think so.  
 961. You think it is essential that they should be constantly reminded in this way? Yes.  
 962. Canvassed, in fact? Yes.  
 963. *Chairman.*] If these tables have only been in existence for nine or ten months, and you have obtained in that time 13,000 subscribers, it is hardly a fair test as to the possibility of the continuance of most of the policies? No; we can only judge from the experience under other tables.  
 964. *Dr. Graham.*] Most of those who are assured under these tables of which we have been speaking are children really? Yes.  
 965. So that the provision for their old age is thought out for them by others? Yes.  
 966. *Chairman.*] From your experience, do you think it is a system of insurance that is likely to become more popular? I think so. We are issuing more policies now than we did a few months back—that is to say, we are issuing about 500 a week under these three tables.  
 967. *Mr. Wilks.*] What is the average age of the entrants? Under the infantile table I should say about 4 or 5 years. Under the other two tables the ages run from 11 to 21. I suppose they would be pretty evenly distributed over those ages—say 14 or 15.  
 968. Then you have no table applying to ages from 25 to 30 years? Not at present.  
 969. *Dr. Graham.*] Do you propose to try such a table? We may do so. At first the infantile table was started, and then the next, which carried the age up to 21.  
 970. Under a table applying to an older age the weekly payment would, of course, be very much higher? Yes, it would be higher.  
 971. *Mr. Wilks.*] What prompted you to fix the age at 65 years for the payment of the endowment? It has been the usual age in England for these transactions.  
 972. And the conditions in this country do not warrant you in lowering the age in your calculation—the mortality tables, for instance? We do not think that the mortality here is less favourable than in the old country, or that people age more quickly. I have myself made a close investigation into New South Wales mortality, and, as far as the figures could be accurately compared, the result, as regards mortality, was in favour of this Colony.

973. *Dr. Graham.*] Do you think the average duration of life here is as good as that anywhere, taking the ordinary death-rate? As compared with England, I should decidedly give the preference to Australia. I should give the preference to New Zealand as against New South Wales. W. R. Dovey.  
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974. The average duration of life is longer there? It is.
975. You are aware that that is not a fair test, because where there is a dense population the rate is bound to be higher than where there is a sparse population? Yes; I was merely dealing in my own mind with the actual figures, without regard to the causes.
976. *Mr. Wilks.*] Are the people who assure with your company confined to the artisan class, or do they include those engaged in clerical and similar work? For the most part those who assure under these tables are of the artisan class, but we have a fair number of others.
977. *Dr. Graham.*] Do you do a large business in the ordinary forms of assurance, apart from these tables? Yes.
978. Do you conduct it on the same principle—that of weekly collection? The company has two branches; one is worked on the plan of weekly payments, and the other on the plan of quarterly, half-yearly, or annual payments. It occasionally happens that after entering under the weekly system policy-holders come under the other system.
979. *Mr. McLean.*] Is it necessary for applicants for assurance under the three tables mentioned to undergo a medical examination? It depends on the amount of the proposed assurance. Under the infantile table it would not be necessary. In those cases we have an inspector's report in the place of a medical report.
980. *Dr. Graham.*] The inspector sees the child as a layman? Yes; he looks at the child and asks a few questions. In the case of most of those who have reached the age of 21 years a medical examination would be necessary under these tables.
981. An applicant for assurance under the table giving an endowment at the age of 65 years of £135 and a certain amount at death would, I suppose, have to submit to a medical examination? In that case, the sum assured being £20, an inspector's report would be taken as sufficient?
982. But would you insure a man for endowment without insuring his life at the same time;—is it possible to provide for old age without at the same time covering one's life by assurance? At present all our tables combine the two.
983. That practically throws a man out who could not pass a medical test for the larger amount? Yes.
984. If a man wanted to insure for £100, for example, he would have to undergo the usual rigid examination? Yes; or even if the amount were only £30.
985. *Chairman.*] Have you given any attention to the question of State old-age pensions? I have given a good deal of attention to the question of thrift among the poor. I was one of the actuaries appointed under the Friendly Societies' Act of 1875 in the old country.
986. *Dr. Graham.*] What was the range of your investigation under the Friendly Societies' Act? We were engaged in the work of valuation and calculation of rates for Friendly Society benefits.
987. *Chairman.*] From your knowledge of the subject, do you think, if the public were asked to make a small payment every year, they would be likely to keep it up in order to entitle them to an old-age pension? I think that in respect to a considerable class of the population there would be a difficulty in obtaining from them a payment for a protracted period for the purpose of providing for old age, especially in Australia, where there is so much changing of residence.
988. You think it would be a very precarious system that would depend upon voluntary contributions? If the contributions were to be purely voluntary, without any systematic machinery for their collection, I think the system would fall through.
989. I suppose to make it a success it would be necessary to have machinery something like that which you have in your society, where very active canvassing goes on? I think so. The Post Office insurances and deferred annuities in the old country have only been taken out on the most limited scale.
990. Have you had any experience in connection with those? I have only occasionally noticed the statistics as to the number in existence.
991. *Dr. Graham.*] Have you taken any interest in the social conditions of this country, apart from the question of insurance? I have.
992. Do you think the conditions of the poor in this country are on a parallel with those you know of in other countries? I think the conditions here are very much better. On account of the superior climate poverty is more endurable here than in England with its rigorous winters.
993. The conditions of life, even for the poor, are easier on that account? Yes.
994. *Chairman.*] And I suppose we have not the same keen competition here for employment as they have in the more thickly-settled countries? I can hardly speak as to that.
995. *Dr. Graham.*] The kind of people who insure with you are really the better class of artisans? Yes.
996. You do not get any of the very poor or of the degraded class? No; as a rule, they are people in receipt of regular wages. Mr. Garvan, the Chairman of our Company, has on several occasions referred to this question of old-age pensions, and, if the Committee desire it, I shall hand in pamphlets containing speeches delivered by Mr. Garvan at our last two annual meetings, in which he dealt with this subject. [Appendix H1.] I also hand in for the perusal of the Committee an article from the *Bankers' Magazine*, containing information on the subject of Friendly Societies. [Appendix H2.] I should like to add to what I have already said on the general subject that, in my opinion, one of the main difficulties in connection with a scheme of old-age pensions is the fact that many of the working classes would probably spend their pensions as they had previously spent their wages—too often in thriftless ways.
997. *Chairman.*] But not if that was all they had to depend upon? I can only say I hope not.

THURSDAY, 6 AUGUST, 1896.

Present:—

DR. GRAHAM,  
MR. MCGOWEN,

MR. WILKS.

MR. SCHEY,  
MR. McLEAN,

E. W. O'SULLIVAN, Esq., IN THE CHAIR.

Henry Norman MacLaurin, M.D., LL.D., called in, sworn, and examined:—

H. N.  
MacLaurin,  
LL.D.

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998. *Chairman.*] What position do you hold? Doctor of Medicine, and Member of the Legislative Council.

999. Have you given any attention to the question of old-age pensions? I have not gone very minutely into the details of it, but I have thought of it, as every person must who has to do with public affairs.

1000. Do you think it would be possible to work a scheme of that character in New South Wales? It depends on the principles upon which you proceed. The only place of which I am aware where an attempt has been made to carry out such a scheme is Germany, where there is a system of compulsory insurance against old age for the working classes.

1001. But in Germany it is a compulsory system? It is a system of compulsory insurance by the working classes for themselves against old age, supplemented by contributions from the Imperial funds, and also, I believe, contributions from the employers.

1002. Do you think it would be acceptable to the British people to have a compulsory system in New South Wales? I do not think it would be acceptable, and, moreover, I do not think it would be just.

1003. You are aware that in Germany there is a great deal of discontent, even among the working classes, with regard to the system of State insurance and old-age pensions? Yes. I believe there is a great deal of dissatisfaction.

1004. If such a system were proposed in New South Wales, upon what lines do you think it should be worked? It seems to me that if there is to be an insurance against old age—that is to say, to provide a pension when the persons reach a certain time of life—it ought to be contributed to by the whole of the public, and not by any one section of the public. But it is when you come to consider the details of a scheme of that kind that you find the difficulty. It is very easy to lay down a principle, and say so-and-so ought to be done, but it is when you come to work out your scheme without hardship upon people that the difficulty occurs.

1005. You think, then, that if the scheme were applied in New South Wales all should contribute to it, and all should have a right to receive the pension? All should have a right to receive the pension, certainly.

1006. You are aware that such a scheme would be very expensive, costing over £600,000 per year? That is one of the difficulties of detail.

1007. Do you think it would be right, then, to limit it to necessitous cases? If you limit it to necessitous cases, then you mark the persons who accept pensions as being somewhat different from other people, and to a certain extent the character of pauperism attaches to them.

1008. In view of the fact that our financial resources would not possibly allow us to give the scheme a general application, do you think we should be justified in applying it to necessitous cases only? There can be no doubt whatever that we should be not only justified, but bound to see that every person escapes the risk of dying of starvation, and therefore every man, and especially every man over 65 or 70 years of age, who is no longer able to work, ought to be protected against death from starvation. But whether it would be wise to call that an old-age pension or not is another question. A pension is a reward for services. It is given to every person who has done the service, so long as he has not forfeited his right to the pension by some misconduct. If, however, you say that a pension is not to be given, except to those who are necessitous, then you introduce the element of pauperism. The recipient would always be looked down upon. People would say to him, "You get a pension, but it is not because you have served well as a citizen, but because you are so poor that we cannot run the risk of letting you die of starvation." Under those circumstances it is not a pension.

1009. *Mr. Wilks.*] How would you regard an old-age allowance? The same thing applies. If you were to give an allowance to an old man who is no longer able to work, and who would die of starvation if he did not get it, every person would approve of such a proceeding, because it would be wrong if the man were allowed to die of starvation. But you must not suppose that such a payment is on the same footing as a pension given to a man for good service, because the element of poverty comes in, and poverty, although it is no crime, is looked upon generally as a kind of mark.

1010. *Chairman.*] Do you think it would be wise to rely upon the people subscribing to this fund voluntarily? They certainly would not subscribe at all. Nobody would subscribe.

1011. You have read, no doubt, of the Danish system of old-age pensions? I have read something with regard to that scheme. I may say that I have not made a very minute study of this question, and I am giving you more my own ideas than those I have acquired from any experience. I have read something of the Danish scheme.

1012. In Denmark they profess to give the scheme a general application, but, in point of fact, it is limited to a considerable extent by conditions. One of these conditions is that no person who has been in receipt of a charitable allowance at any period of his life should have an old-age pension; and another condition is that those who have offended in any way against the law should not have a pension;—would you be in favour of introducing those conditions in New South Wales? The Danish system is, I think, much more nearly a system of pensions than the German system, for, as you say, they exclude persons who have had to get any charitable allowance, and persons who have offended against the law, and they also exclude persons whose conduct by an extravagant or foolish way of living may have conduced to their being brought into a poor condition requiring the pension. There is no doubt that the Danish system embodies the most scientific idea of a pension. The question arises, first, whether we can afford to apply the money in that way, and, secondly, whether the vast mass of the people could not apply the money better themselves than by having it stored up in the hands of the Government to be kept for the purpose of a pension.

1013. But, as a matter of fact, we find that they do not save the money themselves, and as a result a large number of persons are thrown upon the care of the community, and have to be maintained by the State?

State? Those are the class of persons that would be excluded under the Danish system, because of their having been recipients of charitable relief, or having by their extravagant living contributed to their miserable condition in old age. So that the Danish system would exclude them.

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1014. *Dr. Graham.*] Not altogether, because we have many people here entering our asylums for the first time at 60 years of age; such persons in Denmark, provided their past history had been clean, and they had not been recipients of charitable relief, would be entitled to a pension; here we have only one way of dealing with those people, and that is to put them in the poor-house? I have not had much experience of our asylums for a considerable number of years, but at one time I was medical officer at one of the asylums, and I knew the old men very well, and used to chat and talk with them, and hear their stories, and there were very few of them who could escape the charge of having contributed to their position by their extravagant and foolish mode of life. There are exceptions, but the men who go to the asylums, as a rule, have not led wise lives.

1015. Do you think it is possible to deal with the inmates of our asylums in any other way than the present method—for instance, do you think it would be desirable to give them a little weekly allowance and board them out? Judging from my experience in the past, I should think a number of them would be very much better with a boarding allowance. On the other hand, there are some who would not. There are some who are exceedingly difficult to deal with. They have the wandering spirit in them. They like to go into the asylum in the winter-time, when it is cold and miserable, and at the beginning of summer they prefer to come out and become, in fact, vagrants—they enjoy it.

1016. You do not think, then, that the initiation of a system of weekly relief, or a system of pensions, whatever you like to call it, would be an adequate substitute for our present system? Weekly relief and pensions are two different things. A pension is a thing which a man has earned, and to which he has a right; weekly relief is what is given to a man to prevent the sentiment of the community being shocked by his dying of starvation. If we are going to consider a system of pensions it is right we should keep those two things perfectly distinct. A pension is what a man has earned, and, if he has earned it, he has a right to it, and you have no right to take it from him because he is not poor, or to say, "We will only give to those who are poor." The moment you bring in the element of poverty then the payment partakes of the character of relief, which is altogether a different thing.

1017. *Mr. McGowen.*] How could the man earn it by your showing if he were not a contributor to the fund? The notion I gathered from the Chairman was that it would be believed that every respectable man, by working hard in the country for thirty, forty, or fifty years, would have so far contributed to the general wealth of the country that the State would be justified in crediting him with a certain sum of money for the rest of his days. I say that is not pauperism at all.

1018. That is contributing by performing a certain function in the community? He would not be directly contributing—he would be hypothetically contributing.

1019. In such a case as you mention, where the State gave a man over 60 years of age, say, 10s. a week, would the element of poverty come in? I think 60 years of age is too low; but if you say that every man of 65 years of age, or every woman of 65 years of age, who has led a respectable life, has earned the right to a contribution from the State, that is an intelligible principle. It might not work well in practice, but it would be intelligible. But if you say that every man over 60 years of age who is poor has earned the right to something from the State, then a great number of other considerations come into play.

1020. *Mr. Wilks.*] Do I understand from your evidence that it is your opinion that the inauguration of a scheme of old-age pensions would have a tendency to make the people still more improvident? It seems to me that the class of persons, taking them as a whole, who become a burden upon the State in their old age are so improvident that nothing you could do could make them more improvident. They seem never to think of the future.

1021. It would not accentuate the improvidence? I do not think it would. I do not think it would produce any effect whatever on the class who have already become a burden upon the State, and I suppose your scheme is intended to be confined to those who will become a burden upon the State.

1022. *Chairman.*] You have had some experience of the pensioners at Greenwich Hospital, have you not? I had many years ago.

1023. Can you tell the Committee whether men in receipt of those pensions are glad to avail themselves of the chance of retiring from the institution and living upon the pensions, or do they prefer to remain in the institution? They all prefer to go out. As soon as the system of out-door pensions was adopted, I think every man, without exception, who had the option, selected the out-door pension. Although, perhaps, he was not quite so well off as he would be within doors, on the other hand he had greater freedom. He was more his own master, and could live as he liked. Then, again, if he had a wife or any person dependent upon him, as was very often the case, then they could keep a common establishment, so that the wife or dependent children shared in the benefits he received from the institution.

1024. What sums were allowed to these out-door pensioners? The average was about £36 per year. It depended upon the service, because the pension there was considered as a reward for service done. The lowest pension, which was for very short service, was 6d. per day, amounting, I think, to £9 2s. 6d. per annum. The next pension was 1s. per day, or £18 5s. per annum. But no man was expected to leave the hospital as an old man and go out upon 6d. or 1s. per day. It was recognised that it would be absurd to expect a man who had served his country well to go out and starve on that sum. So that the pension given, so far as I remember, was £36 a year, which is about 2s. a day. That was the average pension. Some went as high as £45, and, I think, in some very exceptional cases, over £50. These were given to men who had long service as superior petty officers, and so forth.

1025. Did the able-bodied seamen receive any sum as high as you have named? An able seaman who was over 60 or 65 years of age, and who elected to leave the hospital upon a pension, would receive £36 10s., or about 2s. a day. As far as I remember, £18 5s. was the ordinary pension of an able seaman who had finished his time in the Navy at about 39 years of age. A petty officer, according to his rating, was allowed a little higher pension. A second-class petty officer would get about £27 7s. 6d.; a first-class petty officer would get about £36 5s.; a chief petty officer—I am talking of thirty years ago—I do not know the figures now—would get about £45 odd. That was after 39 years of age, when he had served his twenty-one years in the Navy and left it. But in regard to pensions for old men who had been taken into Greenwich Hospital, and who elected to leave the hospital, the question of their rating did not come into play

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play so much; for it was considered, "What can a man live upon?" And it was thought that the very lowest sum you could fix in the case of a man who had served his country well was £36 6s.; and if he was of a superior rating he would get more—£45 and £54.

1026. *Dr. Graham.*] Could you give us your idea of the present method of conducting our asylums for the infirm and destitute. We have it in evidence that there is only one institution into which all and sundry who are poor and ill are sent. I should like to know your opinion, as one who has been Medical Adviser to the Government, of such a system? I always thought it was bad, and I wrote a report upon it to the late Sir Henry Parkes, when he was Colonial Secretary and I was Medical Adviser—for it mixed up two totally different classes of persons—the sick people who were confined to bed from chronic illness, and old people who were prevented from doing work because they were too old to move about and look after themselves. It was injurious because the sick people did not at that time, in my opinion, get the amount of attention they ought to get, and it was very expensive because the old people were treated a little better than was necessary, and the sick were treated not quite as well as was necessary; therefore the average cost was higher than it ought to have been. I think what I recommended at that time was that the present asylums should be practically confined to old persons—persons who were unable to earn their living from old age—and that a new establishment should be opened where the chronically sick poor should be received and made as comfortable as circumstances would permit, receiving all the medical attention and nursing that their cases required. I contemplated that the treatment of these people would cost a good deal more than the cost in the asylums at the time; but that, on the other hand, the expense of keeping the old people who were in health would be very considerably reduced. At that time the system of mixing up the chronically sick with those who were merely there from old age was very bad, and fatal to administration.

1027. *Mr. McGowen.*] Do you express an opinion as to the wisdom of providing a system of pensions as a substitute for the existing system? The question is, whether you mean a pension to everybody, or outdoor relief, for that is what it comes to? If what is meant is outdoor relief, I think, in many cases, it would be a very good thing; but it would have to be carefully administered by judicious officers. Outdoor relief judiciously administered would, I believe, in many cases be very proper and very suitable—much better than having enormous barracks of paupers.

1028. You said, in your evidence, that you did not believe the citizens would voluntarily subscribe;—do you favour a tax being imposed by the State for the purpose of providing this outdoor relief? For outdoor relief it is perfectly proper that a poor rate should be levied. No person could object to that. There ought to be a poor rate. I think the system they have in England is a very good one, whereby every place is compelled to contribute to the support of the poor within its bounds. The question of pauperism has been very much complicated by the changes in industrial life that have taken place within the last 100 or 150 years. The abolition of the old law of settlement, for instance, has been a serious injury to the poorer classes. The abolition, also, of the old guilds and bodies of that kind was a very serious injury to the working classes. Still that has been done, and we must recognise that when people become old, and unable to work for themselves, they must not be allowed to die of starvation. The funds must be found in some way, and I think the best way to find the funds is by a poor rate.

1029. You said that in your experience of Greenwich Hospital, thirty years ago, it was considered that £36 a year was little enough for people to live upon who had served their country;—what do you think should be the maximum allowed for each adult under this poor-relief system that you have mentioned? The two things are totally different. A seaman who has served his country, and, perhaps, had his leg shot off in a battle, or received some similar injury, is a man of position, and might be regarded as a man who had made his mark in the world.

1030. You defined the class of man who would be worthy of this relief? That was not considered relief; it was considered his share of the funds of the hospital—a share it was reasonable to give him.

1031. But I am speaking about the people who would be eligible to come in under this system, whether you call it outdoor relief or a pension. In your opinion a man who had performed his duty in the State, and who through no fault of his own found himself in old age unable any longer to earn a living—such a man you say will be eligible for the assistance given by the State? Eligible for poor relief on the ground of his being a man and old, and so that he should not die of starvation. The seaman was quite a different man. The seaman who by devoting his life to the public service had acquired the right to certain consideration—in fact, had acquired the right to participate in a certain fund, for Greenwich Hospital has a special fund of its own amounting to about £150,000 a year. He had acquired a right to participate in that fund, which right he could not forfeit, except by some disgraceful offence—for instance, if he committed a felony, or anything of that kind.

1032. Do you think 10s. a week would be sufficient in the shape of poor relief? It depends entirely upon the place where the man lives. Many things have to be taken into consideration. That is a matter of detail which you would have to inquire carefully into. For my part, if I were going to deal with what one may call the pauper classes of the country, I should not like to fix definitely the amount that should be allowed them. I would say that a rate should be struck, according to what was desired in different places, that that should be administered with as much economy as possible, and that a sufficient sum should be given to the people to enable them to live, not in luxury, but in reasonable comfort.

1033. The reason I ask is because we have had evidence from several gentlemen to the effect that 10s. a week would be adequate to keep each adult? It might be; but it would be a great pity to fix the amount by Act of Parliament, for in some places it might be too much, and in other cases it might be too little. If you have a man and his wife together, and they are going to get £1 a week, that is a lot of money.

1034. *Dr. Graham.*] You would fix the maximum by Act of Parliament, would you not? Well, I do not know; I think it would be much better to fix the amount according to the circumstances of the case, as they do in England. They never dream of saying there that the maximum of the poor relief shall be so much a week.

1035. *Mr. McGowen.*] Not for the classes or grades you mentioned? The people I spoke of were not paupers at all—in fact, you might call them gentlemen living upon their own estate. There was £150,000 a year devoted to them, and that was divided amongst them. A pauper who has to live upon the poor rate is another man altogether. If you are going to raise a tax which is to be distributed amongst the people by reason of their being poor, you can cover it up in any way you choose, but it will be a poor rate after all, and what you have to do then in the interests of other poor people not quite so poor, but struggling people

people who have to pay the poor rate, is to see that the allowance given is not too high, and if you fix it by Act of Parliament you will give a great deal of trouble.

1036. *Mr. Wilks.*] Do you consider that the institution of a system of old-age pensions would cause children to neglect their filial duty? I do not think it would cause any respectable man to do so, because it would really be a pension, something to which the old man or woman has a right, and the children could supplement it if they thought proper. A pension is quite a different thing from a poor-relief allowance.

1037. I will put the same question with regard to poor relief? Any grown-up son or daughter who allows his or her father or mother to become a pauper without some very grave reason ought to be looked upon as a very contemptible person.

1038. We have instances now of people in well-to-do circumstances who throw the care of their parents upon the State;—would the institution of a system of State relief have a tendency to increase that practice? I knew a case of that kind where a man was an inmate of the Parramatta Asylum when I was surgeon there. His son was a very respectable man indeed, in good business in Sydney, and the old man complained to me about his son not looking after him. I wrote to the son, and I said, "Here is your father, an inmate of the Asylum at Parramatta. Do you not think it would be better for you to take him out and look after him, as you are fairly well off?" He said, "Take him out; of course I will take him out. I have taken him out half a dozen times. He knows there is a room in my home ready for him, but he will not stay. He comes here; he stays a few weeks, and then the vagrant spirit comes over him, and away he goes into the country, and when he gets exhausted and worn out he is picked up by the police and sent to the Parramatta Asylum." So you see you have that class of people to deal with also.

1039. *Dr. Graham.*] In the event of a poor rate being levied, is there any source of revenue you could suggest that might be tapped for this purpose which is not already tapped;—it has been suggested, for instance, that a tax might be levied on horse-races, stud horses, theatres, and other amusements;—in Denmark the revenue for this purpose is derived from a tax on beer? The drawback to that is, that where you have an indirect origin of that kind it is very apt to lead to extravagance in administration. Every act of extravagance that you commit in administering poor relief, as distinct from pensions, is an act of injustice to the class immediately above who are supporting themselves. If you keep a pauper a little better than is absolutely necessary you make him approach very much to the class immediately above him, and these think to themselves, "Why should I go on working; if I were a pauper, like so and so, I should be very nearly as well off." Therefore, of all things in the world, pauper relief ought to be administered with the utmost regard to just economy.

1040. *Chairman.*] Would it not be wise to endeavour to convert the causes of relief into the means of relief? If you could, but then, you see, you are very apt to introduce some new cause of evil. If you begin to be lavish, as you would when you had a large fund to draw upon, you create a sense of dissatisfaction in the minds of the respectable working classes who are not well off, and who are only able perhaps in times of adversity and distress to keep themselves a little better than paupers, but who still are independent persons.

1041. *Mr. Wilks.*] Merely coming back to the question I asked you about encouraging improvidence? We are now talking of poor relief, which is a very different thing to a system of old-age pensions. I say that in my opinion the best way is to impose a rate directly for that specific purpose. In that way the persons who paid the rate would have an interest in seeing that it was judiciously and economically expended; and I am pointing out that evils which arise from a lavish expenditure of a poor rate are not merely those that arise from any lavish expenditure which is bad, but they have this particular evil effect, that by unduly raising the condition of the pauper they discourage the man who is a little better off, and make him discontented.

Andrew Garran called in, sworn, and examined:—

1042. *Chairman.*] What position do you hold? Member of the Legislative Council, and Vice-President of the Executive Council.

1043. Have you given much attention to the question of State insurance or old-age and invalidity pensions? I have read and thought of it to some extent, but I must confess I have not kept up with all the literature on the subject.

1044. Would you give the Committee the benefit of your advice upon these matters? For a great many years past I confess to have had a leaning towards the system of old-age pensions for two reasons: First, because it seemed to me to be a natural and consistent part of the democratic programme which is inevitable in these days; and, secondly, because I think it adds to the happiness of a great many people's lives, or rather takes away a great deal of misery, if they have a feeling that when they are helpless in old age they will have some provision upon which to rely, instead of looking forward to a blank and desolate time. I think those two things are both important.

1045. Have you formed any opinion as to the best method of applying an old-age pension scheme? All my leanings are in favour of a contributory system, but the difficulty I find from reading on the subject is that no one has ever been able to find a practical method of raising this contribution. Canon Blackley proposed a method which was very good in theory, viz., that you should levy it upon all the young men between the ages of 17 and 21, when their wages are high compared with their responsibilities. But he makes no allowance for long periods of want of employment, or for long strikes, or for long illness, and it does not apply to women as it does to men. Otherwise it is quite true that if a young man were forced to contribute between the ages of 17 and 21—still more if you extend the age to 23—he could very comfortably, without any trouble to himself, furnish enough out of his wages during that period to give him an old-age pension after 65. The difficulty is to collect the money, and nobody seems to have hit upon a plan of voluntary contribution which is feasible. Under these circumstances, I think the best thing we could do would be to extend as far as possible the influence of our Friendly Societies and insurance companies. These institutions have both done a great deal in educating the people in the matter of thrift, but there is a great deal more yet to be done. The age is improving, however, and insurance companies are expanding, and introducing new principles and new methods, and adapting themselves to the wants of people of small means; and the Friendly Societies, against whom the only objection is that there are so many of them actuarially unsound, are becoming better, and their management is improving.

1046.

H. N.  
MacLaurin,  
M.D., LL.D.  
6 Aug., 1896.

A. Garran,  
LL.D.  
6 Aug., 1896.

A. Garran,  
LL.D.

6 Aug., 1896.

1046. *Mr. McGowan.*] Do you believe in subsidising them? That is another question. I am averse to the principle of subsidy. I should prefer self-reliance, pure and simple, if we could have it, because then everybody would feel that he had earned his pension.

1047. How could you make use of the Friendly Societies if you did not subsidise them? You might be obliged to subsidise them to some extent, but at the same time the Government might assist them in all their actuarial matters, and give them the benefit of advice in that way.

1048. *Chairman.*] Then, if you applied the old-age system, you would like to see it made general, so that it might be the right of every person? If you make it contributory you make it the right of a man who has done something for himself, but you still have your residuum of poverty in the thriftless class.

1049. But in the event of a non-contributing system being recommended? It is a tremendously expensive thing if you are going to give it to everybody, and if you do not give it to everybody then you put a brand upon those who have to take it, and it is practically out-door relief instead of in-door relief. It is giving your dole outside instead of putting the recipient into the house. It is the same as in England. There the general tone is that out-door relief is rather injurious to the spirit of self-reliance.

1050. *Dr. Graham.*] You could not remove the stigma attaching to the dole by Act of Parliament? I do not think you could.

1051. Do you think the system as a whole could take the place of our present method? I should be very glad to see the present method either got rid of or modified, because I confess that when I go either to Liverpool or Paramatta I do not come away happy. I do not like the idea of seeing the old men kept as they are kept there. At the same time I feel very strongly the difficulty that is felt in England—that if you make any kind of a poor-house too attractive you will tend to break down the self-reliance of the people, and we all know that the character of the people is one of our greatest national assets, and that we should do a fatal wrong to the community if we sapped the spirit of self-reliance. That is why I feel that if the State by assisting people to save, and to keep their savings tight, which is one of the difficulties, could strengthen this spirit of self-reliance, all the State action then would be in favour of the character of the people; whereas, on the other hand, if the State says, "Come what may, whether you are careful or careless, there is 10s. a week for you after you are 65 years of age," the tendency is to make people careless and improvident. There are two difficulties—first to save, and then to keep their savings. If the State could make it compulsory upon them to save, and could then keep the savings for them, it would get rid of both those difficulties.

1052. *Chairman.*] Do you think we could work the compulsory system in a British community? All my own feeling, and that of the school in which I was educated—the school of English liberalism—is dead against that principle. But as I am getting older I think that the feeling amongst the mass of the people against compulsion is not as strong as it used to be when I was a young man. You must remember that there is a very strong socialistic element now among the people, and it is growing to a practical amount. People are coming to see that if the State can do things for the community better than the community can do them separately, or individually, for themselves, there is justification for State action. Of course, you have to prove what are the cases to which that rule would apply. If you could show that the State could garner these savings of the people and keep them better than the people could garner and keep them themselves, then you would make out a case for the State action, and I do not think the feeling against compulsion would be so strong. There would then be a law imposed upon the people for the good of the community as a whole.

1053. You know that even in Germany, where the principle of State old-age pensions has been applied, and where the socialistic spirit exists very strongly, the workers complain bitterly of the operation of the system? They do not like it, but that may be owing to some details of the working, which we do not know enough of. No doubt, from the books on the subject, there would appear to be a strong feeling against it in Germany.

1054. The complaint is that the compulsory system there, falling, as it does, partly upon the employers, has caused a reduction of wages and an increase of taxation? I think it will naturally cause a reduction of wages, because you cannot increase the cost of production indefinitely. The wage must depend, to some extent, on the profit to be made out of the employment of the labour.

1055. You think that may possibly be the reason why they complain somewhat bitterly against the compulsory system? I think so.

1056. With regard to the asylums, I think you implied by your remarks that you would like to see some reform? Yes; I am not satisfied.

1057. Do you think it would be possible, from your knowledge of the matter, to board out a fair proportion of the present inmates of the asylums? It might. The only danger I see is this, that you might induce people then to put their relatives upon the care of the State who would not do so if they had to send them to an asylum. They would say, "Well, if we can get 10s. a week for keeping the old man, we will put him on to the State at once. We have got him here, we have to keep him now, and if we put him into the asylum for a week, and then take him out again and board him, we shall get 10s. a week from the State for maintaining him."

1058. *Dr. Graham.*] That argument was used when the present system of dealing with State children was discussed, and experience has shown that there was really nothing in it as applied to State children? I am not so sure there is nothing in it.

1059. At all events, Sir Arthur Renwick and Mr. Marted, who are acquainted with the operations of the State Children's Relief Department, stated that that argument was not very strong, according to the experience of the Department? I admit that may be so to a certain extent, but during a discussion in the Legislative Council the other night on the State Children's Relief Bill very strong objection was made to taking the children of widows and deserted wives, on the ground that it would lead to the throwing upon the State of a great many children. There is no doubt there are people in the Colony who have relatives in the asylums to whose maintenance they can well afford to contribute.

1060. *Chairman.*] Would you approve of taxation being imposed upon race meetings, race-horses, book-makers, and sweep consultations, and also upon sports, including cricket matches, and theatres and other entertainments, for the purpose of creating a pension fund, to be supplemented by revenue from wines, spirits, and tobacco? Generally speaking, I should object to complicate the system of taxation, because I think the simpler the system of taxation is in a country the better. But one of your objects, apparently, is to try to make the causes of poverty pay for the effect. The advantage of the system you speak of is simply

simply this—that you levy the tax from people who have money to spend on pleasure, because these are all matters of self-indulgence, and, as a rule, the expenditure that should go to make provision for old age is spent in indulgence in youth and in the prime of life. People cannot resist the temptation to pleasure. People who go to these places do not have to go without their bread and butter because they put a shilling on a horse. It would be levying a tax, no doubt, on luxury and pleasure, and it is defensible on that ground. It might be complicated, but it would be perfectly fair. But even then some people might say, "One section of people are called upon to pay for another section of people. It is true I have spent this money in horse-racing, and so on; but I shall not come upon the State, and you are taxing me to pay for the people who will come upon the State, and who perhaps have not been horse-racing people, but simply public-house people."

A. Garran,  
LL.D.

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1061. But, then, in spending his money upon sport a man indirectly, possibly, is causing poverty and distress on the part of other people? He may; but you cannot prove that he has done so. A great many of these young people who are now spending will in a few years marry and settle down, and perhaps become steady men.

1062. You will admit, I suppose, that it would be difficult to find a fairer system of taxation in order to provide for this purpose? No; I think it legitimate, because you really go to a class of people who can afford to pay.

1063. You annex some of their extravagant expenditure, really? You do not tax the careful, frugal people in such a case; but you tax the free-handed people.

1064. *Dr. Graham.*] You think it would be an element of complexity in the position? It would, though it would not, perhaps, very materially interfere with it. It is quite outside the fiscal question as between freetrade and protection.

1065. Some of those sources of revenue for this purpose are proposed in the New Zealand Bill? Yes; then if you tax theatres, managers will say, "If we have to pay that tax we must cut down the actors' wages."

1066. *Mr. Wilks.*] Speaking of the contributory scheme, do you not think the cost of collection would be very great? In all cases of employment, in large factories, you could collect the contribution through the manufacturer—from the wages.

1067. The difficulty arises where there is intermittent employment, where a man may be at work one week and idle the next? That is where Canon Blackley's scheme is weak, owing to the difficulty of collection.

1068. Would you feel inclined to discard the contributory scheme? I like it theoretically, because I want the people to feel that they have contributed part, if not the whole, of the sum. It seems to me that if a man says, "In my old age I am going to have a pension," he comes upon the State just as much as if he goes into a poor-house.

1069. Do you think the compulsory scheme could be applied to a community like this, with British instincts? I think that the feeling against compulsion is giving way. Where you can show that the compulsion is good in the interests of the community as a whole, I do not think the objection to it is so strong as it was. I was brought up with a very strong feeling against compulsion in any form, but as I am getting older I see that there are cases where compulsion is good for us all.

1070. *Mr. McGouen.*] You are aware that nearly all of the Friendly Societies have a superannuation fund, from which, after a member becomes too feeble to work, he receives weekly payments ranging from 5s. to 7s. 6d.? Yes.

1071. There is no element of poverty in that? Not at all, because the man has contributed. The only thing I want to see in connection with the Friendly Societies is that they should be on a sounder basis. I think there will be a tendency towards amalgamating them more, because the broader the basis of any insurance society the safer it is, and the whole population affords the broadest possible basis.

1072. *Mr. Wilks.*] Do you approve of a system of old-age pensions in preference to one of out-door relief? On the whole I do, because it seems to me that out-door relief is simply a form of charity. It is outside the house instead of inside; and you could not fix any definite sum for out-door relief. Relief should always be graded according to the necessities of the case. A payment of 5s. a week might be ample in some cases, while 10s. would not be enough in other cases.

1073. Then you believe in a graduated system of old-age pensions? Yes.

1074. Do you not think there would be great difficulties in the way of a graduated system;—would there not be constant complaints? We have that now. We have people in our asylums complaining. Go out any day you like and you will find any number of complaints.

1075. Do you not think it would be difficult for the officials to say where there was absolute necessity? There would be great difficulty. Skilled men become practised in detecting imposture, but they are often taken in.

1076. Still, with all these difficulties, you prefer the graduated scale to a fixed amount? If the fixed amount were very small, I should not; but if the fixed amount were large, I should.

1077. What would you think would be a fair amount in a country like this? You could not say, because it would depend upon the rate of wages current at the particular time. The amount would have to be in proportion to the rate of wages.

1078. *Chairman.*] We have evidence from some of the executive officers of the Benevolent Society that a State pension of about 10s. a week would be sufficient to keep an adult in comfort, and 15s. for a married couple? I know there are many young women in Sydney now who are keeping themselves on 10s. a week.

1079. You think that, as a rule, a maximum of 10s. would suffice? Yes.

1080. In the event of the Committee recommending the contributory scheme, do you think the Friendly Societies would afford a safe machinery for the working of that contributory scheme? If you subsidise the Friendly Societies you must exercise control over them. I do not think any Parliament would consent to give away money to a society over which it had no kind of control.

1081. Supposing we were to institute a contributory scheme, and the pension were granted in this way, that every man or woman should join a Friendly Society, and pay a small sum per week, and then at the end of a certain number of years they would be entitled to an old-age pension; do you think the Friendly Societies would afford a safe machinery for the working of that system, if they were properly controlled and supervised by a Government official? They should be sound financially. It would not do for the Government to give this money, and for the Friendly Society to burst up, and then, when the Government money had all gone, for the people to come clamouring to the Government for their pensions.

- A. Garran, LL.D.  
6 Aug., 1896.
1082. *Dr. Graham.*] Would you be inclined to say on general economic grounds that many people become paupers purely from poverty, and from no vice whatever? There are some, undoubtedly; but I do not think that has been the case in this country during the last forty years to any large extent. Since the discovery of the gold-fields until the recent reverses employment was fairly good, and wages were fairly good; but what may lie ahead of us I do not know. There are many cases of poverty arising from sickness; one meets with them continually. A young man gets ill from rheumatism, and he may remain so for six months, or for a year or two years, and he may have a wife and half a dozen children. In consequence of his illness the family drift into poverty, and have to sell everything.
1083. *Mr. McLean.*] From the experience of older countries, we are justified in assuming that a large proportion of men and women in their old age will be in necessitous circumstances? I think they will; they ought not to be so much in this country as they are in England, because they have better chances. At the same time the love of expenditure is stronger, perhaps, here owing to the greater freedom of life and the temptation to spend being greater.
1084. This inquiry is supposed to cover the question of invalidity, at any time of life, as well as the question of old-age pensions;—what is your idea of a pension granted in case of injury? Where there was only temporary invalidity a pension would not be required; but there are some cases where people are permanently laid up, and incapable for life of any kind of work. For the treatment of those cases there should be special hospitals if they cannot be treated at home.
1085. You are aware that in Germany they apply the pension to injured persons? Yes.
1086. There are many persons who suffer permanent injury when they are 35, 40, or 45 years of age to whom a pension should be granted? There are cases of men injured in their work who get a little help from their employers, which lasts perhaps for a year or two, and then they are dropped, and are unable to earn a livelihood.
1087. *Mr. Wilks.*] Do you think our present asylum system could be advantageously used for cases of invalidity? I think it might; many invalids would be better treated in an asylum; but there are cases where treatment is no longer of any use—permanent cripples, for instance.
1088. *Chairman.*] You would not care to maintain such persons in the asylums? No; there is no need for it.
1089. Would you grant them an invalidity pension? Yes; I think they are entitled to it, unless their relatives are thoroughly well capable of looking after them. They are much more particular in Germany about making the relatives pay than we are under the English law.

WEDNESDAY, 12 AUGUST, 1896.

Present:—

Dr. GRAHAM,

MR. SCHEY.

E. W. O'SULLIVAN, ESQ., IN THE CHAIR.

Francis Kirkpatrick called in, sworn, and examined:—

- F. Kirkpatrick.  
12 Aug., 1896.
1090. *Chairman.*] What position do you hold? That of Under Secretary for Finance and Trade.
1091. You produce a return relating to the question before this Committee? Yes; I produce a Statement of Revenue received for the past five years from Spirits, Narcotics, Billiard Licenses, and Beer.

STATEMENT of Revenue received for the past five years from Spirits, Narcotics, Billiard Licenses, and Beer.

	1891.	1892.	1893.	1894.	1895 & 6.	Total.	Yearly Average.
	£	£	£	£	£	£	£
Wines .....	49,377	38,740	27,553	23,792	24,061	163,523	32,704
Spirits .....	869,751	813,772	685,351	655,708	651,409	3,675,991	735,198
Narcotics—Tobacco and Opium, Cigars.	306,698	293,399	265,749	251,740	262,855	1,380,441	276,088
Billiards, &c. ....	9,434	9,339	8,653	7,161	6,900	41,487	8,297
Beer .....	80,890	71,482	48,484	54,172	53,528	308,556	61,711

Elizabeth Lilla Murray called in, sworn, and examined:—

- E. L. Murray.  
12 Aug., 1896.
1092. *Chairman.*] You recently held the position of Superintendent at the Newington Asylum? Yes.
1093. How long were you there? For seven years as superintendent.
1094. How many inmates were there at Newington Asylum? 650; at present I believe there are 670.
1095. What proportion of those do you think would be suitable for being boarded out under a system similar to that which prevails in the case of State children? I think that, at most, one-third of them. About that number would be able to earn their own living, but a certain proportion would only do so if they abstained from drink. I should think there are 300 in the Asylum who ought to be taken care of. There are about 200 moderately sick, and about fifty girls who are silly. We were always finding that some of the inmates had relations who ought to keep them.
1096. The women to be boarded out would have to be free from chronic complaints, and they would not be dipsomaniacs or persons likely to become an absolute burden upon those with whom they were boarded;—do you think that out of the total number of inmates at least 200 would be fit to be boarded out with their relatives or with strangers? Yes; I think 200 would be suitable.
1097. *Dr. Graham.*] Could you give us any ideas as to the average age of the inmates of Newington? We have about forty or fifty young people who pull down the average very much. If you excluded those I think the average age would be about 60.
1098. Have you any system of isolating the sick from the ordinary yard patients? Yes; we have hospitals. There are about 200 inmates in the hospitals. We could not exactly say that they are all quite sick, but they all want a little more attention than they could get without nurses and attendants.

1099.

## ON OLD-AGE PENSIONS.

1099. Are their ailments those of old age chiefly, such, for instance, as rheumatism and debility? Yes; I should think about 120 of them are of that character. We have about six or eight cancer patients, and a dozen or so of consumptives, who, of course, are not old people, and a few suffering from accidents. E. L. Murray.  
12 Aug., 1896.
1100. The number of sick people then is 200? There are about 200 on the doctor's book.
1101. These would have to be looked after by some hospital authorities—they could not be boarded out? No.
1102. You say there are about fifty who are simply demented, and these, I suppose, would have to be looked after in some asylum? There are about forty of that class who would have to be looked after.
1103. Are they cases that are too mild for the ordinary asylums? Yes; most of them have been sent to us from the ordinary asylums to be cured, but they are still too wild to be allowed their liberty.
1104. That leaves 400 old women, excluding the sick and the imbecile girls? Yes.
1105. You say that 200 of these, if they had, say, 10s. a week, could be allowed to go out, and could do very well on that allowance? Yes; I think 10s. is a great deal too much.
1106. You think they could live comfortably on that sum? Oh, yes. A great many of these women could earn their own living. For instance, when I was there I always used to take a cook out of the asylum, and she could easily earn her own living if she did not drink. Such a woman can earn her own living quite well in an asylum where she is protected; but it is different when she is outside.
1107. How many are there, really sober women, who have reached the asylum through pure destitution—do you think there are very many? I am afraid I cannot say there are many. I think, perhaps, seventy old women, including the sick, and excluding fifty silly.
1108. You think the others are chronic drunkards? I think that none of the others can keep away from drink.
1109. It is obvious that a woman who is addicted to that habit is not fit to be boarded out, even though she may be able to earn her living? No, because nobody would keep such a woman in the house.
1110. So that you think if a system of pension were introduced by the State as a substitute for our present method of dealing with the poor, only a very small proportion of the inmates of Newington would be eligible for such a pension? Yes. I should like to say that there would not be half the present number of inmates if some system existed by which the town or place from which the people came was made responsible for their maintenance—if, for instance, there was some system of local government, under which the destitute person would be charged to the locality to which she belonged, something similar to the Scotch law at home. A great many people are sent to Newington to be got rid of by their friends, because, perhaps, their own people dislike having a grandmother in the house who is a little trouble. These people ought to be compelled to maintain their aged relatives. No doubt if there was an allowance of 5s. a week, or something like that, it would be a great inducement to them to keep their relatives.
1111. It would be a standing contribution which would make all the difference between poverty and comfort in the home? Yes, and 5s. a week goes a long way in a family.
1112. You think there is a good proportion of the women to whom the allowance of 5s. a week could be given, and who would find their way back to the family home and be comfortable? They would have to be sent back.
1113. Do you think the 5s. a week would remove the disagreeableness on the part of the family who objected in the first instance to keep them? I do not know as to the disagreeableness. We were always having cases sent to us from country places which ought to have been investigated more than was possible by those in Sydney, and where, if the poor person had been left among the people who knew her, she would never have become a burden upon the State. There is one case I can remember now. It was that of an old woman who had property in Young. Some respectable people from the neighbourhood told us that the son of this woman had taken her property and turned his mother out, and he would not keep her, though he was quite able to do so. There were several other cases of a similar nature.
1114. Where do most of these women come from? From all parts of the country.
1115. Mostly I suppose from Sydney? Yes, I suppose the most of them come from Sydney.
1116. Do you keep a complete history of the women who are admitted and of their antecedents as far as you can ascertain them? Yes.
1117. Do you find that many of them reach Newington from causes of pure poverty, or from crime or drink? The longer I was there the more I saw of the curse of drink.
1118. Are there many married women whose husbands are also old and decrepit? Not so very many. We had an investigation in regard to that some time ago. Some of them have husbands in other asylums, but a great many of them are widows.
1119. I suppose they are very comfortable in Newington? Yes, very comfortable.
1120. Do you think they would be just as comfortable in a private home if they had 8s. a week? No; that is why there are so many. Old people say, "We do not like living with our daughters; the children make a noise, and that kind of thing." That is one reason why they come to Newington. On the other hand, I think it is a very bad system to take people in as easily as they are admitted into Newington. I think it is pauperising the country dreadfully. One of my strongest reasons for leaving Newington was because I could not live there any longer with a good conscience. I felt that it was really doing harm to a young and growing colony like this. I felt this very much during the last two or three years. Newington is a very comfortable home for these people, and it is no disgrace now for daughters and sons to send their mothers to the institution, because they know they will get the very best attention—and, of course, you must do all you can for these old people.
1121. *Chairman.*] You seem to think that 10s. a week would be too high a rate to be paid for the boarding out of the old women? I think so.
1122. Do you think 7s. 6d. would be ample? I think 5s. would be ample. The old women would be able to help in the house; they could mind the children and do a little cooking or a little housework.

Francis Bertie Boyce called in, sworn, and examined:—

1123. *Chairman.*] What position do you hold? I am the clergyman of St. Paul's Church, Sydney. F. B. Boyce.
1124. You are taking an active part in a movement to provide for old-age pensions? Yes; I called a meeting for the formation of a league, asking Sir Arthur Renwick to take the chair. The league has been formed, and we have had regular Committee meetings. There has been a large amount of public interest apparently in the matter. 12 Aug., 1896.  
1125.

F. B. Boyco. 1125. Sir Arthur Renwick gave us particulars of the operations of the league, and its manifesto is embodied in his evidence. We should like your ideas on the question of old-age pensions generally? Sir Arthur Renwick drew up the manifesto, to which we all agreed. I look upon that manifesto as constituting the best ground work for the carrying out of such a scheme. I think the question ought to be treated in two parts. The first part should be that to be dealt with at once by the State, so as to help all those over 65 years of age who are really destitute. The State pays so much towards keeping those persons in the asylums, and I think there are those who are outside the asylums who are equally deserving. In many cases they ought to be supported in a like manner. The asylums at present do not reach the larger number of the destitute, and if the State were to give, say, £60,000 a year for the purpose of providing for those outside the asylums, numbering probably 3,500, it appears to me that would meet the case at present and for some years to come, leaving some system of State insurance, compulsory or voluntary, to be brought in to provide for the future. As regards the present, it appears to me the only plan is for the State to subsidise these old people. The amount that I would suggest is 1s. a day. I may say that there is one old man in my district 82 years of age. He is supported by Major Fanning, in England, and he gets 6s. a week. Out of this he has to pay 3s. a week for rent, and he manages to live upon the balance, and he keeps himself very respectably. There are two old persons living in Dangar-place, both about 70 years of age, and they get 6s. a week between them, which I believe is a pension from the Order of Druids. This pension is really the backbone of their living, and they receive rations from the Benevolent Asylum. Having that 6s. a week they are able to live together, instead of being separated, and being sent one to Newington and the other to Liverpool. I should prefer very much, as I presume we all would, a higher pension, say 10s. a week. But looking at the increased amount that would be required from the Government, and the difficulty in obtaining the larger sum, it appeared to me that if we fixed an allowance of 1s. a day it might meet all present wants.

1126. *Mr. Schey.*] You think that 1s. a day is sufficient to meet the wants of each old person? Yes; I would rather that it were 10s. I admit, but looking at the difficulty of getting Parliament to assent to a very large outlay, 7s. a week as a minimum would be very satisfactory.

1127. And that would only be where they lived with their own family? I do not think we could fix that for them; they would be able to live where they liked.

1128. But would that sum be sufficient, even as a minimum, for them to live anywhere else except with their own family? I think they could make arrangements. This old man I speak of, 82 years of age, gets 6s. a week, and he gets on fairly well.

1129. I suppose those arrangements would have to be made by some agency or some society such as that with which you yourself are connected? Yes; or the arrangements might be made by the Inspector of Charities through some person appointed for that particular purpose.

1130. In your experience, I suppose, there are other societies that pay pensions to these old people as well as the one you have named? Some of the churches have been paying pensions to old people.

1131. I am referring to Friendly Societies? I do not know of any Friendly Society in this Colony that pays pensions to old people. I only belong to one society myself, and I know that they do not do so. In reference to this part of the subject I have twelve typical cases that have come specially before me during the last month. The first is that of E.B., a widow, aged 71; receives rations from the asylum; no children living; has been helped by her granddaughter; she suffers from rheumatism. She is applying for relief. The next case is that of a man, aged 69, to whom an order was given on the Benevolent Asylum for blankets; he lives near the Eveleigh Railway Station, and exists in a hand-to-mouth way begging about. J.B. and his wife live together; one is 74 years old and the other is 72; they are both very weak and practically destitute; they have been begging for the last three or four years; they are very respectable people, and lost their money through the failure of one of the building societies three or four years ago. Mrs. E., aged 69, a widow, very poor; her children will not support her; she also gets rations from the Benevolent Asylum. L.C. and his wife live at Petersham; they are both about 80 years of age, they are both very weak, it is almost impossible for them to get work, and there is every prospect of their being separated, one going to Newington and the other to Liverpool. The next case is that of A.M., aged 74, and his wife, aged 51; the man is sick and deaf; he sold his bedstead a week or two ago to pay his rent, and has no means of support. The next case is that of N.G., a widow, aged 72; she gets rations from the asylum; complains of want of something for a fire in the very cold weather; she has some children, but they are out of work, and having families of their own cannot do anything for her. Then there is Mrs. M., an old woman aged 82; she is receiving 5s. a week from a certain source, without which I do not know how she would get on. She lives in a small place by herself and is helped in sundry ways, but it is a very miserable existence for her. Then J.S., aged 65, has a wife and five children, the oldest being 15—no work or means of any kind. W.S., aged 70, is a widow, very weak; has rations from the asylum; no means of support otherwise. H.S., aged 68, staying with a Mrs. Roberts, is a widower; no means of support; wanted blankets to cover him in cold weather; very respectable old man. Again, L.G., 64 years of age; no work; very respectable; no means of support; an old strain goes against him and prevents him from doing any hard work.

1132. *Chairman.*] Those are twelve typical cases which you think might be relieved by the payment of old-age pensions? Yes.

1133. And do you think that 7s. a week to each of those individuals would keep them in comfort? It would provide the bare necessities of life.

1134. Then 15s. a week would keep a married couple? Yes. Of the twelve I have mentioned, three of the cases are those of a man and wife, and if they had 14s. a week they could live.

1135. You said just now that some of the churches paid pensions;—could you give the Committee one or two illustrations? I do not like to refer to my own church. We, however, have not done so much lately, but for some years we paid 2s. 6d. a week to a number of old persons. It was begun by Canon Stephen, my predecessor, at Redfern, and it was carried on for a long time. Those people have died off, at least there is only one case living.

1136. That money I presume was provided by voluntary contribution? Yes; from the church offertories.

1137. *Mr. Schey.*] I suppose you are acquainted with the different old-age pension schemes that have been put forward in England from time to time? Yes. In giving my ideas just now I spoke of what I understood as the present necessity. As regards the future, I think there ought to be a system of compulsory insurance by which persons should be enabled to provide their own pensions, and the State should subsidise

subsidise their contributions to a certain extent. I think that persons when they arrive at the age of 21, and up to the age of 31, should be required to pay in so much as may be decided by Actuaries every half-year towards a fund. If it were understood that that would provide a pension of 7s. or 10s. a week, I think the payments would be cheerfully made by a great majority of persons. I think it ought to be done, because it is a fundamental principle that every one should so provide for himself that he should not be a burden upon the country in his old age. I take that as a fundamental principle of the scheme.

F. B. Boyce.  
12 Aug., 1896.

1138. Do you not think it would be much wiser for such payments to be made as often as the man or woman received wages, rather than half-yearly or yearly? I think in all these matters we need an open mind as regards details. But if the payments were required to be made too often the thing might come to be regarded as a nuisance and a worry. I would rather see it all done within, say, ten years, the payments to be made either quarterly or half-yearly. Quarterly payments would be very fair, I think.

1139. But you think the payments should extend over a period of, say, ten or fifteen years during the best working period of life? Yes; when the children are young, before the expenses of the family have increased, and when the man is at his best. The amount he would have to pay would not be very much. It would be understood that it would be for the purpose of providing an old-age pension, and the great bulk of the contributors would not live to have an old-age pension, but would die before reaching the pension age. Therefore, everything those persons had paid in would go towards the survivors. At the same time, to prevent complaints, I would say that half of the amount paid—supposing the man died at an age not less than of 40—should go to his widow, leaving the other half to go towards making up the fund. The State would also have the interest and compound interest for the fund.

1140. At what age do you think the pension should be applicable to the great majority of persons—at what age should it commence? Looking at the matter from a practical point of view, and having regard to the possibilities, I should say 65 years. I should be very glad to see it commence at 60; but if we knocked off five years, the extra sum required would be so large that one hardly sees how the Government could provide it.

1141. Have you ever gone into the question of how many persons who would subscribe for ten years from the age of 21 to 31, according to your plan, would be likely to survive to the age of 65—how many per thousand? The adult population of New South Wales is about 600,000, and the number that would survive at 65 would be about 30,000, so that the payments need be very small in consequence of the large number of deaths.

1142. Therefore the large bulk of those who would actually make these contributions would not survive long enough to enjoy the benefit? That is quite true.

1143. But if it were practicable you think the pension should commence at 60? I think we should all be glad that it should commence at 60 from a humane point of view; but in dealing with a matter of this kind one aims at something that the State might take up and work out.

1144. To what extent do you think the State ought to subsidise the individual contributions? That is not a point I have specially studied. I think the subsidy ought to be to the extent of the present cost of the maintenance of the old people in the asylums. I think if the State at the present time gave towards the compulsory insurance fund £100,000 a year that would be ample.

1145. Would you make it a fixed amount, irrespective of the number? Yes; it would probably be the best way.

1146. What proportion, in your opinion, should the State subsidy bear to the amount privately contributed? I think if the State gave one-fourth it would be fair. I am speaking of a matter applying to all people. The idea is to remove any taint of pauperism, and the rich and the poor alike would have to insure. If the rich did not care about receiving the pension they need not do so; they might give it to a hospital.

1147. Do you think the contributions to such a fund should be confined to the State and the individual, or do you think the employers of working people should also contribute a portion during the working period? No; I think that is a weakness of the German system—introducing the employer. I think it ought to be done by the State and the individual alone. It is then freer from the taint of pauperism.

1148. Do you think that at the present time anything might be done by voluntary effort to prepare the way, and accustom people to the idea before commencing a compulsory system? I daresay something might be done. If nothing is done to establish a compulsory system of insurance, I should then be very much in favour of some system of voluntary insurance subsidised and guaranteed by the State, and which might begin at once.

1149. If it were proposed, for instance, to subsidise benefit societies who chose to establish funds for the sake of making provision for the old age of their members, as a tentative proposal, would you be in favour of such a plan? I should be in favour of it, but I do not think it would be so good as a compulsory system.

1150. Speaking of it merely as a tentative proposal, and as preparing the way for a general compulsory scheme, do you think it would be a good thing to do? The danger is that it might shut out the better and more complete scheme. In anything that is done care should be taken to see that it would not be possible to alienate or mortgage a pension.

1151. Have you any scheme of your own to propound beyond what you have already given us? Nothing beyond the scheme that people should pay between the ages of 21 and 31, and that they should then have the full right to a pension. I have already pointed out that the amount they would have to pay would be very small, because of the number of deaths before the pension age.

1152. *Dr. Graham.*] What would you do with regard to those who could not contribute; there would be a certain proportion who only obtained irregular work, and others who only came to the Colony late in life;—would you give them a pension? I should have their cases specially considered by a magistrate or by a Board, with the expectation that the time would come when they could make the necessary contribution.

1153. But suppose they arrived in the Colony at the age of 50, and on reaching 65 years of age found themselves utterly destitute, and having had irregular periods of work they were unable to make any contributions to the fund—those are cases that come largely upon the State? Of course in working out a scheme of this kind you could scarcely deal with those exceptions, which are not very numerous. I think we could only apply the scheme to people regularly resident in the Colony. Persons who have spent nearly all their lives in other countries could not expect a pension here.

Hugh McLachlan called in, sworn, and examined:—

H.  
McLachlan.  
12 Aug., 1896.

1154. *Chairman.*] What position do you hold? Secretary to the Railway Commissioners.
1155. Some time ago the Railway Commissioners formulated a scheme for the establishment of a Providence and Pension Fund among the employees of the Department;—will you kindly give the Committee the history of that scheme? Particulars of the scheme were embodied in a Bill which was formally submitted to Parliament in 1890. I hand in a paper giving a summary of the provisions of the Bill, showing the conditions and information regarding the scheme. [*Appendix I.*] The proposed fund was to meet cases of sickness and to provide for accidents, and for an allowance in case of death from natural causes; there was also a provision for old age.
1156. That scheme was not legalised by Act of Parliament? No.
1157. Was not some scheme afterwards proposed and submitted to the vote of the men? That is the scheme.
1158. Did the men vote in favour of it or against it? A very large number of the men expressed themselves in favour of the scheme; but, on the other hand, a considerable number showed some feeling against it. As it would cost the Commissioners a large sum of money, and was intended solely for the benefit of the men, and the men did not seem to appreciate it, the Commissioners said they would not go on with it, and it was dropped.
1159. But was not some other scheme tried later on? No; that was the only scheme. For many years the men have had their own departmental Sick and Accident Societies, of which there are sixteen or seventeen, some large and some small. Some have not been very successful, while others have a balance in hand. The railway employees at Darling Harbour have a Sick and Accident Society, and so also have the traffic employees and the permanent-way branch. The whole of these societies embrace a membership of 3,000 or 4,000. I understand there is a movement on foot to have them amalgamated, as the cost of governing so many separate societies must be large.
1160. Do you know what are the allowances that are made to injured members of the societies? I could not say; but I think the benefits are similar to those of ordinary Friendly Societies.
1161. *Mr. Schey.*] So far as you know, none of these societies provide pensions? No, I think not.
1162. They are confined exclusively to sick benefits? Sick and accident benefits.
1163. *Dr. Graham.*] You compel all your men to insure, do you not? Yes; it is a condition in the Railways Act. That, however, only applies to appointments made since 1888, and the old employees are not required to insure. Under the Railways Act one of the conditions of permanent employment is that the employee shall insure his life.
1164. According to the amount he receives? Yes—according to a sliding scale. The following is a copy of the section of the Act:—

No probationer's appointment shall be confirmed until he has effected, in some life insurance company carrying on business in this Colony, an insurance on his life providing for the payment of a sum of money at his death, should it occur before the age of retirement from the Railway Service; or, if he survive until that age, of a sum of money or annuity on the date of such retirement. Such insurance shall be continued, and the amount thereof fixed and increased, from time to time, in the prescribed manner, and no policy of insurance so effected shall, during the time such person remains in the Railway Service, be assignable either at law or in equity.

1165. *Mr. Schey.*] About how many men was the scheme of the Railway Commissioners, to which you have referred, designed to embrace? I think that practically everybody in the Service could come under it.
1166. About how many? About 10,000 persons.
1167. What percentage did the Commissioners propose to contribute to the fund, as against the contributions of the members? An amount not exceeding 75 per cent. of the contributions. But, personally, I think that the Commissioners expected to contribute equal to about 50 per cent. The clause dealing with this point stated:—"The Commissioners shall contribute to the fund an annual sum equal to 75 per cent. of the contributions of the employees, or such less amount as the actuary shall certify to be sufficient to secure the stability of the fund." The Commissioners thought they would require to contribute an amount equal to the contributions of the employees, or about £10,000 a year. Speaking from memory, I think that was about the sum mentioned at the time. I may say that most of the large railway companies in England have established provident and pension schemes in which the contribution of the company is equal to the amount contributed by the officer. I know that in England, as regards at all events the salaried officers, there is a deduction of 2½ per cent. per year from their salaries, and an equal amount is contributed by the company. It was an equitable arrangement, because if an officer resigned he received his money back. The only thing that would debar him from participating in the benefits would be dismissal for misconduct. In case of his death his widow would receive certain benefits, equal, at any rate, to the amount he had subscribed. Looking over the conditions of one of these English funds some years ago it struck me that they were very equitable. Our Civil Service Superannuation Fund is very inequitable, because a man may subscribe for forty years, and, if he resigns the Service at the age of 59, he loses every penny he has subscribed.
1168. Can you tell us what reason guided the Railway Commissioners here in fixing a smaller amount of contribution than that provided for by the English Railway Companies? Certain benefits were laid down, and the Commissioners wanted those benefits to be given. As a matter of fact, I think the estimate was that they would be required to contribute in about the same proportion as the English companies. I think the impression was that the contribution would amount to about 50 per cent.—that is £ for £.
1169. *Chairman.*] Do the men complain about this compulsory insurance? I think a few of them do, but the majority do not complain. We have had complaints—in fact, some of the men have not paid up. But we have power to deduct the contributions from their wages.
1170. *Mr. Schey.*] You compel all new employees to insure? It is compulsory under the Act.
1171. *Chairman.*] I suppose they are glad to get employment on those terms? Yes.
1172. *Mr. Schey.*] They are what are called endowment insurances, are they not—that is to say, payable at 60 years or previous to death? I think in practice they are made payable at death. The section says: "An insurance on his life providing for the payment of a sum of money at his death, should it occur before the age of retirement from the Railway Service; or, if he survive, until that age, of a sum of money or annuity on the date of such retirement." I think the practice is in most cases to make the amount payable at death. It is the wiser provision.

1173. But the idea of the provision was to relieve the Government of the necessity of paying the men who had to retire from the Service, was it not? No.

1174. Therefore it was provided that they should insure themselves and receive the money when they left the Service at 60? No, because there is no obligation on the Government to pay them a pension on retirement.

H.  
McLachlan.

12 Aug., 1896.

THURSDAY, 13 AUGUST, 1896.

Present:—

DR. GRAHAM,		MR. O'REILLY,
MR. SCHEY,		MR. WILKS.

E. W. O'SULLIVAN, ESQ., IN THE CHAIR.

William Francis Schey called in, sworn, and examined:—

1175. *Chairman.*] What position do you occupy? Member of the Legislative Assembly.

1176. The Committee understand that you desire to present some documents bearing on the question of old-age pensions? I desire to present some newspaper articles by Dr. W. A. Hunter, lately a member of the House of Commons, representing Aberdeen, in Scotland, who wrote a series of articles in the year 1892, which give, I think, the best information in a short form on this subject. Included in the articles is a summary of how the matter is dealt with in the various countries of Europe, and there is a copy of a draft Bill by the French Government for the purpose, also a draft scheme, and a number of tables showing the pensions provided by different provident societies established in England and Scotland, also a scale of contributions and benefits. There is a complete draft scheme with tables showing how the pensions might be paid by voluntary contributions during a certain period, and also by general rates raised from the community the same as rates for other purposes. [*Appendix K 1.*] In the *Nineteenth Century* for August, 1895, there is a very valuable article by Miss Edith Sellers on the Old Age Homes in Austria, containing a particularly valuable table as to the way in which the elderly people are treated there. They have a sort of asylum system, and the old people are allowed a fixed sum of money per day, and have a restaurant of their own where they can choose their own meals exactly as they like, paying by a fixed scale, which is ridiculously low according to our ideas [*Appendix K 2.*] I should like to say, that after giving the matter a considerable amount of study, while I desire to see a scheme initiated which will be general and compulsory in its character, more on the lines of the scheme in existence in Germany, I think that part of the object might be served by initiating a system which would be perfectly voluntary on the part of every person; and, to save the large expense which must be necessary in providing any new machinery for the purpose, I propose to avail myself of the machinery already in existence in connection with the Friendly Societies, by allowing all the Friendly Societies, if they so choose, to form a separate fund for the superannuation of their members, to which either an entirely separate subscription should be paid, or a certain portion of the ordinary subscription should be set apart; the fund to be perfectly optional on the Friendly Society in the first place, and perfectly optional on every member of the society in the second place. Whatever moneys were paid into the fund should be deposited in the Savings Bank of New South Wales, and be subsidised by an equal amount paid by the Government from the Consolidated Revenue every month. On arriving at the age of 60 years those who had been paying into the fund should receive the sum of say £1 a week as a pension.

W. F. Schey.

13 Aug., 1896.

1177. Have you drawn up an outline of the scheme? Yes. When this Parliament met I sought for leave to introduce a Bill, and the motion is now on the Paper for discussion on the 12th August. I hand in to the Committee a draft of the Bill, to be printed as an appendix to the report. [*Appendix K 3.*]

Joseph Benjamin Oliffe called in, sworn, and examined:—

1178. *Chairman.*] What position do you hold? At present I am a contractor, and I am also secretary to Tattersall's Club.

J. B. Oliffe

13 Aug., 1896.

1179. It has been suggested that we ought to make the causes of distress a means of assisting to alleviate the distress of the people; and as amongst the causes of distress are considered horse-racing, intoxicating drinks, billiard-playing, and all amusements of that kind, it has been thought desirable to have the opinion of yourself and other gentlemen as to whether anything could be done by the State to raise a revenue from these various descriptions of sport. In the first place, I should like to ask you how many bookmakers are enrolled in your club? There are sixty-four members in Sydney now on the roll; there are fifty-two on the roll from Melbourne, and there are twenty-eight members who are unfinancial, and who have gone out.

1180. What do these bookmakers pay to the club? They pay £3 3s. a year.

1181. What do they pay to the various racecourses at which they bet? I believe they pay sums varying from £5 to £7; but as to that I am not in a position to say.

1182. I believe there is another betting club besides Tattersall's—one higher up Pitt-street? Yes.

1183. Do you know how many members they have? Speaking approximately, I think they have between thirty and forty members.

1184. Outside of these two betting clubs, are there not a number of bookmakers who do not subscribe to any club, but who carry on a very active business on the racecourses, and also in various meeting-places in the city? Yes; there are a number of people who get a living in that way. They are generally designated as "rats."

1185. I mean the men who bet in the Leger Stand? I have no knowledge of them; I never visit the Leger.

1186. Then there are others who visit the Flat? Yes.

1187. And there are betting men in various parts of the city? Yes; and men who bet outside the racecourses.

1188. These men are supposed to be carrying on an illegitimate business, as compared with the legitimate bookmaker? Yes.

1189.

- J. B. Olliffe. 1189. Would it be a good thing—would it tend to purify speculation if a license fee were imposed upon what may be called legitimate bookmakers, provided it had the effect of preventing these men to whom you refer from carrying on the business? I do not think it would have any effect upon them at all. I think they would carry on the business just as they do now.
- 13 Aug., 1896. 1190. But could they carry it on on the racecourse? They could carry it on on the racecourse just as they do now. If they paid a fee, that would be entirely within the province of the Parliament in framing provisions with regard to them. Of course, in doing that, you would legitimatise an illegal game.
1191. The idea is that these games do go on under existing conditions, and will go on, and the question arises, ought we to turn them to good account by levying a tax upon them in order that they may contribute to the assistance of the aged poor? If such a thing could be done, I believe it would be beneficial, as regards obtaining revenue from the source you suggest. But I do not think the amount received would be as large as you anticipate—in fact, I think it would be a mere bagatelle, because the great majority of the bookmakers, including legitimate bookmakers, are more or less paupers at the present day. I am satisfied that the majority of the sixty-four members of Tattersall's, in Sydney, are not in a good position.
1192. *Mr. Wilks.*] I suppose if you were to enforce a license probably only about forty would pay the fee? I think it probable that all the members of our club would take out a license; but as to others outside, I am not in a position to say. Judging from the character of those latter men, I should say they would very probably adopt some means to evade the law, if possible, or, failing that, they would not take out a license. I am now speaking in a speculative way, because I have no idea as to the amount of impost that would be levied on these people. If you were to put an extortionate sum upon them, I think you would drive them to other means of obtaining the end they have in view. On the other hand, if you charged only a small sum the revenue derived would be insignificant as compared with the purpose for which it is intended.
1193. Then you practically mean that the enforcement of any fee—even so extortionate a sum as £100 per annum, which would, undoubtedly, be an extortionate amount—would not recoup the expense of collection? I am sure you could not collect it.
1194. *Chairman.*] Could you not collect it through the A.J.C. and similar institutions? No: the A.J.C. is simply a horse-racing club, and has nothing to do with bookmakers, except to register them and give them permission to ply their avocation within a certain area of their racecourse.
1195. But we have in view the passing of a law to empower the A.J.C. to make such a levy upon them? That would be a different thing. Of course if you empowered the A.J.C. to compel them to pay such a license fee, then of course there would be a revenue from it. The A.J.C. have ignored bookmaking altogether up to the present, and you would be imposing upon the club a liability which it does not at present have, and to which I am satisfied it would be entirely opposed.
1196. You say the A.J.C. have ignored bookmaking—still it flourishes on the course? What I mean by ignoring it is, that if a bookmaker proceeds on the course to make a book he simply obtains a register from the A.J.C. That is all they do with him, beyond this: If I see a bookmaker on the course, and I know he is what they term a “brusher,” or a man who does not pay his debts, and if, being a member of the A.J.C., I complain to the Secretary, the Secretary will take notice of this man, and if he does not pay he is turned out. That is all the A.J.C. do with regard to bookmakers.
1197. *Mr. O'Reilly.*] From your view, so far expressed, you think that, presuming any reasonable levy were made upon these bookmakers, the sum raised would be insignificant? I think so. I think it would not pay for the cost of collection.
1198. And supposing a heavy sum were imposed, you think the effect would be to drive men who are at present registered into the ranks of those whom you have described as “rats?” Yes.
1199. That is to say, it would really have a deleterious effect upon the status and tone of the betting community? Yes, it would. I do not mean to say it would exactly drive the registered bookmakers into the ranks of the class referred to, but it would have such a tendency among those whose tastes might be in that direction.
1200. Do the fifty-four Melbourne bookmakers who are enrolled in Tattersall's pay the same annual fee? Yes; £3 3s. a year.
1201. They come over for big events? Yes; but if you imposed a fee of £100 a year, I do not think you would see many of them.
1202. I gather that, roughly speaking, there are about 150 recognised bookmakers? There are ninety-four bookmakers registered with the A.J.C. This number includes the members of the other club referred to just now by the Chairman, the members of Tattersall's Club, and the members of the Melbourne Club.
1203. Then you might say 100 registered bookmakers in New South Wales? Yes. These are registered with the A.J.C., but there are other bookmakers of the class I have designated as “rats” and “brushers.”
1204. But, roughly speaking, there are about 100 registered bookmakers of what you might call the better class—reliable men;—therefore I am right in believing that this tax could only be made applicable to about 100 bookmakers? Yes.
1205. So that, even if it were £10 a head, which seems to me a heavy tax, that would only mean a revenue of £1,000 a year? Yes.
1206. And there are a large number of unrecognised bookmakers—men who evade the law now, and who would evade the law in any case? Yes.
1207. And no legal enactment could get at them any more than it seems able to put down “totes” and other forms of illicit gambling? Quite so.
1208. *Chairman.*] A license fee of £10 a head on 100 bookmakers would return £1,000 a year;—do you think that would be possible in the case of the bookmakers of the legitimate class to whom you have referred? I hardly think it would be possible under present circumstances. I am speaking now of depressed times and a depressed country.
1209. Would it be more advantageous to the bookmakers to pay a fair tax per year rather than see the totalisator legalised? I think it would be much better for them to pay a tax of so much a year than to compete with the totalisator.
1210. You think if a choice were given to them they would prefer to pay a fair tax per year, and be legalised, rather than see the totalisator brought into existence as a legal instrument? I am quite satisfied about that. I would go further, and say that if you introduced the totalisator, and it became successful,

successful, you would, to a very large extent, extinguish bookmaking. That is my impression of the situation. I am now speaking in the light of the experience of other countries. For instance, I have heard people from New Zealand say that the totalisator there has more or less extinguished the bookmakers; at all events it is detrimental to them, and I know they are adverse to it, and look upon the whole subject as distasteful. I think they would be willing to submit to a tax rather than face the totalisator.

J. B. Oliffe.  
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1211. *Mr. Wilks.*] What do you think would be about the highest fee that could be imposed upon bookmakers—a fee that they could pay? I do not think you could extract more than £10 a year from them.

1212. That would mean that they would pay, in the aggregate, £1,000 a year? Yes.

1213. The revenue derived from the totalisator would be much greater? Of course it would. You would get much more from the totalisator, because you would get all their profit of 10 per cent. on the gross takings. Most of the money that now passes through the hands of the bookmakers would pass through the totalisator, and you would get your 10 per cent. from the totalisator, or whatever you agreed to charge.

1214. Then you consider, as a private citizen, that to collect £1,000 from such a source for the assistance of a fund for the aged poor would be really absurd? I think so. I do not think it would pay for the cost of collection.

Thomas Strattel Clibborn called in, sworn, and examined:—

1215. *Chairman.*] What position do you hold? Secretary to the Australian Jockey Club.

1216. You heard the idea suggested to the previous witness, that it has been thought that the causes of distress might be made a means to assist the aged poor by contributing towards a pension fund, and as sporting is considered an indirect cause of distress, it has been suggested that we might ask your opinion as to the probability of working the totalisator in New South Wales, and also as to whether it will be possible to register racecourses, and obtain a certain fee. Let us first take the totalisator; you have, I presume, given some attention to that subject? Yes. I will first go back to what Mr. Oliffe said. I perfectly concur in what he said, but without wishing to be invidious, I may say that the bookmakers as a class are not men of any standing. I know myself that, with the exception of five or six, these men, as they say in the vernacular of the ring, could not stand to be shot for any amount at all—in fact, if they made a heavy loss they could not pay. I now come to what is the curse of the whole thing—too much racing; and, without presuming to give this Committee any advice, I may express the opinion of one who has been for some thirty years connected with the turf. Racing is now purely a matter of business, while in days gone by it was a sport which we all honored, and most of us loved. The best thing the Government of this country can do, in my opinion, is to legislate for horse-racing—to say what number of race-meetings shall be held, and what amounts shall be added. The effect of that would be to minimise racing, and do away with the curse of the present day, pony-racing, which has created a class of some 4,000 or 5,000 people in Sydney who do nothing else. There are two methods by which this can be done. In the first place, you could say, if it is possible to make it law, that you will not permit a race-meeting to be held within 50 miles of Sydney to which less than £500 per day is added, with a maximum charge of one sovereign entrance for each race. That would effectually settle the pony-races, because at these places they could not give more than £200. In regard to these smaller or proprietary clubs I may say one or two words, without wishing to cast a stone at any of the gentlemen who are proprietors of them. Of these I may name Messrs. Harris and Ackman as the principal proprietors of Rosehill, which is a most worthily-conducted and admirably-managed club in every sense; Mr. Peter Moore is the proprietor of Moorefield; Mr. W. L. Davis, and one or two other gentlemen whom I do not know, are the proprietors of Canterbury Park; and Mr. E. E. A. Oatley, is the proprietor of Warwick Farm. I believe these gentlemen are all good, honest, upright citizens. But I fail to see why these men should, by their action in establishing these proprietary clubs, create a class who do nothing else in the world but live by gambling, who never do a day's work in their lives. Of the two methods which might be adopted to improve horse-racing, I have mentioned one, viz., to provide that there shall not be any racing within 50 miles of Sydney, unless that there shall be £500 added money per day, and that there shall be a maximum charge of one sovereign entrance for each race for the privilege of racing for that £500, and that there shall not be more than six races each day. The other possible method is to introduce the totalisator, and, having introduced it, have a Commission who shall say who shall use the totalisator. Racing is not much use without betting. People will not go to a racecourse without gambling. If, as in New Zealand, South Australia, and Queensland, you have the totalisator, and you have a man who says to a proprietary club, "Your race-meeting is not sufficient; you are only giving £150; you shall not have a race-meeting." If you do that you minimise racing, and you create a more healthy interest in the sport. So you get rid of the stigma that attaches to racing. If this question comes before the House of Assembly every representative of a country district is bound to vote for it. Those who lived here in the olden times will remember that Orange, Singleton, West Maitland, Bathurst, and all these large country towns had race-meetings, and good race-meetings. The Hawkesbury Club used to give £500 for its handicap; now it gives £150. The falling off has been caused by the centralisation of racing in Sydney to the benefit of proprietary clubs. Country members should vote for the reform I suggest, because all the racing would be brought then to different centres, and you would have racing again at Bathurst, Orange, Singleton, and all those other country places. With such a changed condition of things horse-racing would again become a sport. I am sorry to say that at present it is solely and wholly a business. As regards the A.J.C., we have a vast organisation in Sydney, which, I may say, has a great deal to do. We are in touch with England, New Zealand, and all the other Australian colonies. A man who does wrong on the turf with us is practically debarred from taking part in any turf pursuits either in the old country or in these colonies. His name is recorded in our register, which goes out every week, and a copy of which is received by every prominent racing club, and the English racing clubs send us their register. If we choose to say—and we have been abused for not doing so—to Warwick Farm, Moorefield, Canterbury Park, and Rosehill, "You shall only hold one race-meeting a week," that would tend to minimise racing in the vicinity of the metropolis. But what would be the consequence? Rosebery Park, Lillie Bridge, and Brighton, who have nothing to say to us, and will not come into our union or league, would take their days themselves, and the evil would be worse than ever.

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The fixing of £500 a day would immediately shut up all these latter places, and it would not prevent the legitimate clubs, such as Rosehill, Warwick Farm, Hawkesbury, Moorefield, and Canterbury Park from holding race-meetings (say) once a fortnight, and pony-race-meetings once a fortnight. The best clubs would stand the test, and the weakest would go to the wall. Rosehill has, I believe, a capital of £80,000, and Canterbury Park £25,000. I am thoroughly convinced that with the totalisator, and by legislating for the management of racing inside a limit of 50 miles, a most excellent effect would be produced. As far as bookmaking and the bookmakers are concerned, the tax to be collected would be of no account in a vast undertaking like this, whereas the custom of the totalisator is that the club using it deducts 10 per cent. for the cost of management, and pays 2½ per cent. to the Government. The club must also prove, to the satisfaction of the Government auditor, that every shilling of profit derived from the totalisator is added to the stakes advertised and given by the club. The club I have the honor to represent is, strictly speaking, a non-proprietary club. As a matter of fact, it is a trustee for the public, and manages racing for the benefit of the public. All the funds are contributed by the public. Our balance-sheet will be in the Press in a day or two, and you will be able to see for yourselves that, with the exception of my salary and the salaries of the management, all the personal benefit derived by the Committee is the champagne which they drink at the luncheon on race-days. The totalisator, I may say, has proved an undoubted success in South Australia, Queensland, and New Zealand. Mr. Oliffe, no matter what he may think in his inner soul, is naturally bound in honor, from the position he occupies, to express an opinion against the totalisator, because Tattersall's Club have invested an immense sum in a palatial building and in carrying on its great organisation. Together with the Victorian Club, it may be described as a most admirable institution, and the A.J.C. register men who are members of either club, assuming their membership to be a sufficient status. The club takes from each bookmaker £25 a year for the privilege of betting at Randwick on twenty-six days in the year. We do this in order to assure the public that they bet with good men. If one of these men loses his money and does not pay he is immediately sent about his business, and not allowed again to enter the racing world. They walk on strict lines, and know that if they do not pay their bets they are dead to the racing world for ever, not only in this Colony, but also in all the other Colonies and in England. The money thus received from the bookmakers is distributed in stakes. No one connected with the club benefits a shilling by it. I cannot, of course, say anything about the proprietary clubs—as to what they charge. They have had to make a small charge, but it is principally for the same reason as in our case—that the public may be assured that they bet with tried men. For my own part, I do not think the higher class of bookmakers would suffer in the least by the introduction of the totalisator. That, however, is more a racing question. From a revenue point of view, there is no doubt that the totalisator is a source from which you could derive a certain revenue. At the same time you would do a tremendous amount of good for racing. The A.J.C. gave nearly £24,000 in stakes to be raced for last year. Of this we took nothing back—we gave, excepting £915, the balance absolutely. In the case of the Victoria Amateur Racing Club, for instance, a man races at Caulfield for a stake of £100, and he has to pay £3 for the privilege, whereas the A.J.C. gives a prize of £100, and the horse-owner contributes £2 of his own money, which is added to the stake, and the money is all divided amongst those who win it. We advertise exactly what we give. In the other case they advertise a large amount, and they take the fees and things, and put them in the club's coffer.

1217. In order to carry out your idea of limiting the number of race-meetings, and assisting to purify sport, would it be desirable to impose a license fee upon every racecourse to assist towards the old-age pension fund? I think so. I think every racecourse worthy of the name should be in a position to pay a fee. I have prepared a small return which I will be happy to leave with the Committee, and I will explain it as I go on. We register clubs and meetings. We register, as a club, any persons who have a racecourse of their own—racecourses are generally grants from the Crown—and who furnish us regularly with the names of the committee and particulars of the club, and give at least £150 to be raced for at each meeting. We charge them nothing, except £1 1s. when they register their club in the first instance. Their name is then returned and placed in the register of clubs holding race-meetings throughout the Colony. Where a certain number of people in a country town meet with the view of starting a racing meeting, one man will give £5, and perhaps from the storekeeper and others £50 or £60 is raised for a day's racing. The meeting is registered in order that this day's racing may be brought under the jurisdiction of the A.J.C., so that in case of any dispute arising out of the meeting it may be referred to our club for settlement. They make application on a proper form, and, as I say, we charge them £1 1s. for registration. This year we registered 385; in 1895 we registered 398; and the year before 339. In earlier years I think there were nearly 500 of these meetings held throughout the country, but the number is being reduced on account of the centralisation of racing in Sydney. Outside of these again there are numberless race-meetings held of a still more minor character. Such meetings are got up, for instance, for the shearers after the board is finished, and very often they are promoted by publicans. The rule is that as long as these men do not advertise their race-meeting in a newspaper in any way the Jockey Club takes no cognisance of them; but if they put an advertisement in a newspaper to say that races will be held at such-and-such a spot, all the horses running at that meeting are debarred from taking part at any meeting registered under our rules. Then they apply to us to have the disqualification removed. We retain it for twelve months, and then they have to pay a guinea for having it taken off. I produce a list of the clubs that are registered, together with the names and addresses of the secretaries. I may say that in connection with the A.J.C., there is a Jockey's Accident Fund, which this year amounted to £4,745. It is on a liberal basis, and is systematically organised. There are 153 jockeys who pay an annual license fee of £1. In regard to bookmaking, if the gentlemen who are ordered to carry out the law would enforce it as regards the shop-betting in Sydney, the members of Tattersall's Club would very soon be in a position to pay something respectable in the shape of a license fee as suggested. There are, as I have pointed out, 4,000 or 5,000 people belonging to a class which has been created by proprietary racing and pony-racing. At the present time you may say that there are seven days' racing in Sydney in a week, reckoning the night business at Lillie Bridge. Rowe-street is full of shops carried on by this class of people. If they would do as was done in Melbourne, and give one of the principal offenders three months' imprisonment, without the option of a fine, they would stop the evil effectually; but a fine of £10 or £20 has no effect whatever.

1218. *Mr. O'Reilly.*] I think you mentioned that there were eighty-six registered racecourses? Registered clubs.

1219. Does each of those clubs own a racecourse? They generally hold a racecourse as a grant from the Crown for recreation purposes.

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1220. We may say, roughly speaking, that there are eighty-six clubs in the Colony? There are eighty-six clubs who give £150 a year, but if you minimise the racing in Sydney you will have ever so many more clubs in the Colony, because Singleton and all those other places that now hold picnic races will be able to return to their former standing, and hold race-meetings. I have no doubt members of the Committee will recollect when there used to be two-days' race-meetings at Hawkesbury, Bathurst, and Orange. At present racing in Sydney is overdone, and has ceased to be a sport.

1221. But, under existing circumstances, you say there are eighty-six clubs that are financially strong—clubs that you recognise? Yes.

1222. What fee do you think these clubs could contribute to such a fund as is suggested? A very small fee. If you got a couple of guineas a year out of them it would be the utmost they could give. They consider they are doing very well if they have £50 in hand. Hawkesbury, Moorefield, Rosehill, Sydney Turf Club, Tattersall's, Warwick Farm, and Canterbury Park could afford a higher fee.

1223. *Mr. Wilks.*] With regard to the totalisator, could you give the Committee an approximate idea of the amount of money that would pass through the instrument in one year if it were legalised in New South Wales? I could not say. But I know that at Onkaparinga, in South Australia, they put £30,000 through the totalisator during two days' racing. Any South Australian paper will give you the amount invested in the totalisator at each meeting. In 1893 the amount was £13,000; in 1894, £17,000; in 1895, £16,000; in 1896, £18,788. Each of these amounts represents the sum put through the totalisator during one or two days' racing.

1224. How much of the amount thus received would the State get? Two and a half per cent. The odd fractions, which cannot be paid with the dividends, are devoted by the club to charity. Last year, I think, in connection with the South Australian Jockey Club, these fractions amounted to £180. The *Sydney Daily Telegraph* of 11th August, dealing with turf statistics from New Zealand, states that enormous amounts were put through the totalisator during the season, and gives the following figures:—The Auckland Racing Club handled £81,297; the Canterbury Jockey Club, £73,155; the Dunedin Jockey Club, £53,111; the Wellington Racing Club, £37,714; the Hawke's Bay Jockey Club, £33,274; and the Wanganui Jockey Club, £24,375. The total investments amount to £635,421. This represents the amount passed through the totalisator in New Zealand in one year, and of that amount the Government received 2½ per cent. Taxing bookmakers or taxing clubs would be a pettifogging thing for such a fund as you require. The totalisator is the thing which would return a substantial revenue.

1225. Do you think it reasonable to suppose that in New South Wales £1,000,000 would go through the totalisator in a year? Yes; I think you might fairly make that estimate.

1226. At 2½ per cent that would give £20,000 a year? In New Zealand it costs about 1½ per cent. to work the totalisator. It is necessary to employ an army of clerks. I may say that I only speak from hearsay in regard to this matter, and that full information could be obtained from the Secretary of the Jockey Club at Christchurch and the Secretary of the South Australian Jockey Club.

1227. *Chairman.*] You say it costs 1½ per cent. to work the totalisator;—does that come out of the 2½ per cent.? The Government get 2½ per cent. clear. The club takes 7½ per cent., and from this they deduct their working expenses, and they must prove to the satisfaction of the Government auditor that every farthing beyond the working expenses is added to the money given by the club to be raced for.

1228. *Mr. Wilks.*] What do you think of the suggestion with regard to consultation sweeps? I do not think they do a bit of harm, if conducted by men of the same character as George Adams.

1229. I mean, how would it do to license them as a means of revenue? I do not think it would do. You would then legalise consultation sweeps, and the moment you did so you would have any number of applicants for licenses, and I can assure you from my own knowledge that of the numberless sweeps conducted here only three men ever carried them out in a fair and legitimate manner, and those men were Mr. J. J. Miller, Mr. George Adams, and H. Oxenham. I think it is far better that they should be put down altogether. When you come to legalise an operation you must have it under your own thumb. There is no doubt there will be gambling, whether it is on the Stock Exchange or anywhere else. People talk about gambling at the races, but there is just as much gambling on the Stock Exchange. The Stock Exchange is, to a certain extent, legalised, and I do not see why horse-racing should not be legalised. What I should like to see would be that horse-racing should be brought back to what it was twenty years ago—a sport.

1230. *Chairman.*] Do you think the legalising of the totalisator would tend to impair the sport in any way? The bookmakers tell you so, but I do not. Horse-racing was practically dead in South Australia until they legalised the totalisator.

1231. Then, instead of injuring horse-racing there it has proved beneficial? In South Australia they tell you that they cannot live without it, and the same in Christchurch. The bookmakers, of course, live by the game. They make a bet, and if they win all the profit goes into their pockets. With the totalisator the money is distributed among the public. If Jack loses to-day, Tom wins; if Tom loses to-morrow, Jack wins, and a certain percentage still goes to keep the sport at a proper status.

1232. I have a paragraph here from a South Australian paper, which says: "Adelaide charities have benefited to the extent of £2,570 in eight years by the S.A.J.C. totalisator percentages." Do they give 2½ per cent.? Yes; and I think that the 2½ per cent. which the Government in South Australia receives goes to charities. Possibly the sum mentioned in the paragraph represents the fractions, which are not paid by the club, and which, perhaps, go to charities.

1233. *Dr. Graham.*] I suppose the revenue you get from licensing jockeys is a very small thing? £153 a year.

1234. And the trainers? The revenue from this source is £49; but it does not pay us for the printing.

1235. *Mr. O'Reilly.*] Is every racehorse registered? No.

1236. Could you form any idea as to how many racehorses there are in the Colony? In the town and country there are 474 horses in training at different places, but that does not give anything like an adequate idea of the total number, because there are racehorses not in training planted all over the place. There might be, I suppose, about 600.

1237. Surely a man who runs a racehorse ought to be able to pay a fair annual amount to the Government for the privilege? I do not think so. There are wealthy owners who race for sport, but you can count them on your fingers. These men would be able to pay, and the charge that would be made would be to them a mere bagatelle. But it is different with the man who keeps a racehorse for a living. In

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New Zealand the law is very strict in debarring the smaller clubs from using the totalisator. There is no doubt there ought to be some restriction in that respect, and a certain limit as to the stake. At Lillie Bridge, for instance, there is a stake of £10, and the race is run under the electric light.

1238. You think that the enforcement of a licensing fee in regard to racecourses would enable the Government to better control race-meetings, and while minimising the evils which have clustered around sport, would also add a little to the support of the aged poor? Yes; it would not, however, be sufficient to impose a licensing fee upon racecourses. No race-meeting should be held within a radius of 50 miles of the General Post Office in Sydney at which there was not at least £500 added money each day, there not being more than six races, with a minimum charge for entrance of £1. A provision of this kind, combined with a license fee, would very much tend to minimise racing.

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## OLD-AGE PENSIONS.

## APPENDIX.

## A.

[To evidence of Mr. Wm. Ridley.]

NEW SOUTH WALES CENSUS OF 1891.—Total Population, also Occupations of Persons of 65 years and upwards.

Classi- fication.	Order.	Occupations.	Population.			Males.	Females.	Total.
			Males.	Females.	Total.	65 and upwards.	65 and upwards.	65 and upwards.
		Total of New South Wales.....	608,003	515,951	1,123,954	16,636	11,689	28,325
		Total, Specified Occupations .....	605,670	515,420	1,121,090	16,527	11,552	28,079
		<b>CLASSES.</b>						
I		Professional.....	21,089	10,402	31,491	536	306	842
II		Domestic .....	17,659	38,208	55,867	690	452	1,142
III		Commercial .....	81,291	5,338	86,629	1,853	347	2,199
IV		Industrial .....	122,650	17,801	140,451	3,061	167	3,228
V		Agricultural, pastoral, mineral, and other primary pro- ducers.	134,908	12,118	147,026	6,103	347	6,450
VI		Indefinite.....	4,788	5,635	10,423	1,827	1,549	3,376
VII		Dependents .....	223,285	425,918	649,203	2,458	8,384	10,842
		Occupation not stated .....	2,333	531	2,864	109	137	246
		<b>ORDERS.</b>						
I	1	Ministering to Government, defence, law, &c. ....	7,263	99	7,362	130	1	* 131
	2	"    religion, charity, health, &c. ....	13,826	10,803	24,129	406	305	711
II	3	"    board, lodging, and attendance .....	17,659	38,208	55,867	690	452	1,142
III	4	Dealing in finance and real property .....	7,267	652	7,919	595	188	783
	5	"    art and mechanic productions .....	3,304	247	3,551	70	3	73
	6	"    textile fabrics, dress, and fibrous materials ...	4,965	857	5,822	52	8	60
	7	"    food, drinks, and stimulants .....	12,736	1,066	13,802	274	68	337
	8	"    animals, animal and vegetable matters.....	2,692	59	2,751	41	4	45
	9	"    fuel and light .....	1,339	10	1,349	30	...	30
	10	"    minerals and metals .....	1,503	26	1,529	19	2	21
	11	General and undefined dealers, and speculators on chance events.	16,819	1,920	18,739	433	65	498
	12	Engaged in storage.....	313	1	314	6	...	6
	13	"    transport and communication .....	30,358	500	30,858	332	14	346
IV	14	Working in art and mechanic productions .....	18,496	621	19,117	419	3	422
	15	"    textile fabrics, dress, and fibrous materials	7,709	16,892	24,601	290	158	448
	16	"    food, drink, and stimulants .....	7,683	240	7,923	155	5	160
	17	"    animal and vegetable substances .....	9,181	12	9,193	163	...	163
	18	"    minerals and metals .....	13,717	8	13,725	239	1	240
	19	"    construction of buildings, railways, roads, bridges, and earthworks.	38,507	4	38,511	961	...	961
	20	Working in undefined industrial pursuits .....	27,357	24	27,381	834	...	834
V	21	Engaged in cultivation of land, rearing of animals, mining, &c.	134,908	12,118	147,026	6,103	347	6,450
VI	22	Of independent means, and deriving income from in- definite sources.	4,788	5,635	10,423	1,827	1,549	3,376
VII	23	Dependent relatives and others, including scholars .....	214,692	421,960	636,652	757	7,924	8,681
	24	*Dependents on charity and public support .....	8,593	3,958	12,551	1,701	460	†2,161
		Occupation not stated .....	2,333	531	2,864	109	137	246

\* The larger portion of the persons dependent on charity were living in public institutions, and, classed according to age, were as follow :—

Age Groups.	Males.	Females.	Total.
Under 5 years .....	187	151	338
5 years and under 15 .....	929	849	1,778
15 " " 20 .....	257	307	564
20 " " 25 .....	623	279	902
25 " " 45 .....	2,850	1,073	3,923
45 " " 65 .....	2,133	826	2,959
65 and upwards .....	1,701	460	2,161
Age not stated .....	13	13	26
Total .....	8,593	3,958	12,551

† The indigent people of 65 years and upwards numbered 2,161; the total number of persons in the Colony of these ages was 23,265; so that it may be said that out of every 100 persons who reach 65 years, 8 will enter the asylums for the destitute.

B 1.

[To evidence of Sydney Maxted, Esq.]

WEEKLY Dietary—Compiled from Dietary Scale (Weight).

REMARKS—Hospital dietary to be regulated by Medical Officer; and general record to be kept for inspection in the Medical Journal of alterations made each day. Wines, beer, and spirits to be issued only under authority of Medical Officer, except in cases of emergency.

Day.	Breakfast.	Dinner.	Tea.
SUN.	{ 1 pint coffee.* 1 pint porridge, made with 2 oz. maize meal or oatmeal; and 1 oz. treacle or sugar at discretion of Superintendent. 4 oz. bread.	Irish stew, made with 14 oz. mutton (including bone weight), 12 oz. potatoes, and other vegetables, onions, and herbs, 1 oz. flour. 4 oz. bread. Cabbage.	1 pint tea, made with $\frac{1}{2}$ oz. tea, $\frac{3}{4}$ oz. sugar, $\frac{1}{2}$ gill milk. 6 oz. bread. 1 oz. honey.
MON.	{ 1 pint coffee.* 6 oz. bread. 1 oz. jam.	14 oz. beef roasted. 12 oz. potatoes. 2 oz. bread. 6 oz. pudding †	1 pint tea. 6 oz. bread. 1 oz. treacle.
TUES.	{ 1 pint porridge, made as above. 1 pint coffee.* 4 oz. bread.	Haricot, 14 oz. mutton and necessary vegetables. 4 oz. bread. 1 pint soup, made from liquor of beef bones of previous day, with 1 oz. barley, rice, or pease meal, and other vegetables.	1 pint tea. 6 oz. bread. 1 oz. jam.
WED.	{ 1 pint coffee.* 6 oz. bread. 1 oz. treacle.	14 oz. boiled beef, with soup made as at present. 12 oz. potatoes. 4 oz. bread.	1 pint tea. 6 oz. bread. 1 oz. honey.
THUR.	{ 1 pint coffee.* 1 pint porridge, made as above. 4 oz. bread.	Curry, 14 oz. mutton and necessary seasoning. 12 oz. potatoes; rice may be substituted for potatoes. 4 oz. bread.	1 pint tea. 6 oz. bread. 1 oz. treacle.
FRI.	{ 1 pint coffee.* 6 oz. bread. 1 oz. honey.	14 oz. beef (weight includes bone), minced. 12 oz. potatoes. 4 oz. bread. Cabbage.	1 pint tea. 8 oz. currant cake, made with same ingredients as pudding.
SAT.	{ 1 pint coffee.* 1 pint porridge, made as above. 4 oz. bread.	Repeat Tuesday's dinner.	1 pint tea. 6 oz. bread. 1 oz. treacle.

\* 1 pint coffee, made with  $\frac{1}{2}$  oz. coffee,  $\frac{3}{4}$  oz. sugar,  $\frac{1}{2}$  gill milk. Tea can be substituted for coffee at the discretion of the Superintendent.  
 † Bread to be cut up and served out in its proportions for each meal.  
 ‡ Receipt for bread pudding for 250 men, each to receive about 8 oz. —Bread, 50 lb.; flour, 12 $\frac{1}{2}$  lb.; suet, 8 $\frac{1}{2}$  lb. (dripping should be used when practicable); sugar, 8 $\frac{1}{2}$  lb.; currants, 8 $\frac{1}{2}$  lb.; spice, 2 oz. These quantities absorb 3 buckets of water. To be divided for boiling into puddings of required size. Daily record of breakfast, dinner, and tea to be entered in book kept for that purpose.  
 P.S.—The foregoing to form basis of diet, which may be so regulated or altered at discretion of Superintendent as to suit convenient working of establishment, so long as it is not inferior in quality and quantity, and is of the same general character.

Daily Dietary Scale for Unemployed Men.—14 oz. bread, 14 oz. meat, 12 oz. vegetables, 1 $\frac{1}{2}$  oz. sugar, 1 gill milk,  $\frac{1}{2}$  oz. coffee,  $\frac{1}{2}$  oz. tea, 1 oz. jam, treacle, or honey, for tea, and same for breakfast with bread, when no porridge; 1 oz. pepper and 20 oz. salt for every 100 full daily rations. Any inmate requiring more bread at any meal should at once inform the Superintendent, or any person authorised to receive request.

Daily Dietary Scale for Ordinary Working Men.—16 oz. bread, 16 oz. meat; 12 oz. potatoes, 1 $\frac{1}{2}$  oz. sugar,  $\frac{1}{2}$  oz. coffee, 1 gill milk,  $\frac{1}{2}$  oz. tea, 1 oz. jam, treacle, or honey for tea, and also for breakfast with bread, when no porridge.

Men actively employed may be allowed (if the Superintendent considers the nature of their work justifies it) 1 pint coffee and 1 oz. cheese, in addition to authorised scale for ordinary working men. The medical officer may order any extra articles of diet he may deem necessary in particular cases.

B 2.

No. CHARITABLE INSTITUTIONS OF NEW SOUTH WALES.

[Asylum Stamp.]

HISTORY of \_\_\_\_\_, admitted this day, \_\_\_\_\_ 189\_\_\_\_.

If previously admitted into an Asylum for Infirm and Destitute, where \_\_\_\_\_ Age \_\_\_\_\_ Religion \_\_\_\_\_

Former occupation \_\_\_\_\_ Birthplace \_\_\_\_\_ How long in the Australian Colonies \_\_\_\_\_

How long in New South Wales \_\_\_\_\_ Name of Ship \_\_\_\_\_ Whether married or single \_\_\_\_\_

Father's Christian Name and Surname \_\_\_\_\_ Occupation \_\_\_\_\_ Mother's Christian Name and Maiden Surname \_\_\_\_\_ To whom \_\_\_\_\_

If married, where \_\_\_\_\_ At what age \_\_\_\_\_ To whom \_\_\_\_\_

If married more than once, where \_\_\_\_\_ At what age \_\_\_\_\_ To whom \_\_\_\_\_

Issue (living).

Names.	Ages.	Addresses.	Occupations.	Whether Poor, Comfortable, or Well-to-do.

Number of Males deceased

Number of Females deceased

Particulars

*Particulars of Parents, Husband, Wife, Brothers, and Sisters (if living).*

Names.	Relationship.	Addresses.	Whether Poor, Comfortable, or Well-to-do.

*Means (if any).*

If an Army or Navy Pensioner . . . Money with Inmate . . . Amount Banked . . . If any claim to any land, investment, or other property . . . Ailment . . . Why Admitted . . .

*Remarks.*

**B 3.**

GOVERNMENT CHARITABLE INSTITUTIONS OF NEW SOUTH WALES.

APPLICATION FOR ADMISSION INTO AN ASYLUM FOR INFIRM AND DESTITUTE.

*Information to be supplied by Applicant.*

1. Name, birthplace, and religion .....
2. Age, and whether married or single.....
3. Circumstances of entering Hospital .....
- This question can be omitted in the case of Metropolitan Hospitals, or when an applicant is not in any Hospital.
4. Period of residence in New South Wales .....
5. Former occupation .....
6. Does applicant desire admission into an Asylum .....
7. Names and addresses of relatives in full (relationship to be stated)
8. Has applicant any relatives or friends in any of the Colonies willing and able to support him if he is sent to them or admitted into an Asylum; if so, give their names and full addresses? }
9. Has applicant ever been an inmate of any Charitable Institution in this or any other Colony; if so, for what period and where? }
10. Is he an Army or Navy Pensioner; or has he any other means of support? }
11. Amount of money in possession of applicant, or in the custody of friends? }
12. Has applicant any legal claim to, or is applicant likely to become entitled to any land, investment, or other property? }

*Signature of Applicant.*

*Date.*

I certify that I have carefully questioned going application; and I beg to recommend that

with reference to the information supplied in connection with the fore-

This certificate is not required in case of Metropolitan Hospitals.

*Signature of J.P. or Local Officer in Charge of Police.*

The Director of Government Asylums  
for the Infirm and Destitute,  
289, Cleveland-street, Sydney.

CERTIFICATE of a Medical Practitioner on the within application, for the information of the Department of Charitable Institutions.

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I CERTIFY that , who is able to undertake a journey from to the Government Asylum for Infirm and Destitute, is suffering from , and that he is a fit subject for admission into the Asylum on the following ground :-

1. He is physically incapable of earning a livelihood at present.
2. He states that he is destitute, and has no friends able or willing to support him outside an Institution.
3. His case is not one which should properly be treated in a local general Hospital.

Remarks\* {

Medical Officer. †

\* If physically or mentally incapable of travelling alone, the applicant's condition should be fully described.  
† This certificate should be signed by the Local Government Medical Officer (if any) unless an Hospital or a Gaol transfer.

Application made by\*

\* Here state whether by Hospital, Magistrate, Gaol, &c.

Admission order and pass to be sent to {

## B 4.

[To evidence of Mr. G. H. Pitt.]

## FRIENDLY SOCIETIES.—“WEALTH AND PROGRESS” (COGHLAN).

A LIST of the principal societies is given below, from which it will be seen that, according to the latest returns, there were in existence 15 leading orders (some of them subdivided into districts, provinces, or grand divisions), comprising 794 distinct subordinate branches, and 24 independent societies.

Name of Orders or Societies.	Lodges or Branches.	Members.	Members good on books.	Amount of Lodge or Branch Funds.	Amount of District or Grand Lodge Funds.	Total Funds.
<b>Manchester Unity I.O.O.F.—</b>	No.	No.	No.	£	£	£
Sydney District .....	71	10,407	9,769	90,826	23,775	114,601
Cumberland District .....	8	477	448	1,314	592	1,906
Hunter River District .....	7	691	641	7,380	2,067	9,447
Goulburn District .....	13	1,456	1,362	10,770	7,550	18,320
Newcastle District .....	11	1,328	1,253	4,043	6,683	10,726
Bathurst District .....	19	1,628	1,499	12,713	6,078	18,791
Tamworth District .....	17	1,734	1,603	17,081	6,418	23,499
Riverina District .....	7	734	676	3,744	2,012	5,756
Braidwood District .....	4	214	192	890	1,262	2,152
Young District .....	2	231	213	1,702	752	2,454
<b>Grand United O.O.F.—</b>						
Sydney District .....	40	4,811	4,078	22,297	7,450	29,747
Braidwood District .....	20	1,261	1,072	5,498	5,780	11,278
Manning River District .....	5	226	188	1,062	733	1,795
Newcastle District .....	3	407	321	2,178	631	2,809
Hunter River District .....	25	2,872	2,619	10,391	3,244	13,635
Bathurst District .....	6	565	477	2,067	1,680	3,747
Goulburn District .....	8	565	511	2,837	1,104	4,001
Williams River District .....	6	380	300	2,426	381	2,807
<b>Independent O.O.F.</b>	70	5,477	4,584	18,820	13,474	32,294
<b>National Independent O.O.F.</b>	3	369	274	218	127	345
<b>Ancient Order of Foresters—</b>						
Sydney District .....	41	3,825	3,432	13,650	6,701	20,351
New England District .....	2	144	130	177	41	218
Neutral Courts .....	6	1,068	950	9,065	.....	9,065
Juvenile Courts .....	3	102	86	311	.....	311
<b>Order of Royal Foresters</b>	29	1,885	1,885	10,781	17,756	28,537
<b>Irish National Foresters</b>	4	328	178	399	115	514
<b>United Ancient Order of Druids—</b>						
Sydney District .....	54	5,761	4,992	9,444	6,209	15,653
Newcastle District .....	11	1,133	989	5,038	3,605	8,643
<b>Grand United Order of Free Gardeners</b>	29	1,820	1,820	3,446	97*	3,543
<b>Independent Order of Rechabites—</b>						
Adult Lodges .....	43	1,521	1,318	1,754	5,163	6,917
Juvenile Lodges .....	23	703	597	143	.....	143
<b>Sons and Daughters of Temperance</b>	78	.....*	.....*	.....*	.....*	.....*
<b>Protestant Alliance Friendly Society</b>	56	6,542	5,665	30,850	12,900	43,750
<b>Loyal Protestant Benefit Society</b>	23	1,016	852	1,856	796	2,652
<b>Hibernian Australasian Benefit Society</b>	34	2,005	1,634	4,742	3,097	7,839
<b>Australasian Holy Catholic Guild</b>	13	1,897	1,705	13,426	.....	13,426
<b>Miscellaneous</b>	24	2,850	2,797	14,836	.....	14,836
<b>Total</b> .....	818	68,433	61,105	338,175	148,342	486,517

\* Returns incomplete.

The benefits promised by Friendly Societies are, in kind, much the same in all societies, and usually comprise medical attendance and medicine for a member and his family, sick pay allowance—generally £1 per week for the first six months, reduced thereafter to 15s. or 10s.—in the event of the death of a member's wife, and funeral money to his wife on the death of a member. The Act limits the amount payable on the death of a member to £200, and no annuity can be granted above £50, but there is no limit to the amount of sick pay, although the rules of some societies limit the total amount receivable weekly to 42s., nor to the number of societies to which one person may belong, and from which he may receive benefits, but the combined benefits must not exceed the abovementioned amounts.

In addition to the Friendly Societies properly so called, some of the registered Trade Unions give benefits analogous to those of the societies mentioned above. The benefits, however, are usually smaller in amount, seldom exceeding 12s. a week for sick pay, and £7 in case of death. A few Trade Unions also make allowance to their members when they are out of employment.

## D.

[Appended by the Committee.]

Sir,

Government Statistician's Office,

Sydney, 6th July, 1896.

I have the honor to inform you that in compliance with your request I interviewed Major Z. C. Rennie, General Manager for Australia of the Mutual Life Insurance Company of New York, in regard to his attending to be examined by your Committee on the subject of Old Age and Invalidity Pensions, and he desired me to say he would be pleased to place before the Committee any knowledge he has acquired on the subject.

I also interviewed Colonel Ball, the United States Consul, for the same purpose. My mission, so far as obtaining his personal attendance was fruitless, as he leaves for America to-day; he, however, desired me to say he would have had much pleasure in acceding to the wishes of the Committee had circumstances permitted. I gleaned the following facts from him:—Pensions were formerly limited to soldiers and sailors physically disabled in action in the service of the United States in all wars since 1812, to widows and children of those slain in action, and widows and children of those who died subsequent to the engagements.

Some six or seven years ago, however, the conditions were modified so as to embrace any application from soldiers or sailors who might become physically or mentally infirm from causes in no way connected with the actions they had been engaged in.

Apparently

Apparently no special provision is made for sustaining the fund from special sources, as all liabilities under this head are made a charge on the revenue as a whole.

According to the "Statistical Abstract" of the United States for 1895 the number of persons in receipt of pensions and the disbursements were as follow:—

Pensioners on roll, 30th June, 1895.		
Invalids .....		751,456
Widows, &c. ....		219,068
Total .....		970,524
Disbursements.		
To 30th June, 1894 .....		\$1,717,275,719
During year ended 30th June, 1895 .....		140,939,361
Total .....		\$1,858,235,080 or £382,352,900

I have, &c.,  
GEO. H. PITT.

E. W. O'Sullivan, Esq., M.L.A.,  
Chairman, Select Committee on "Old-age Pensions."

### E 1.

[To evidence of Mr. A. Davis.]

LIST of the Principal Orders, and particulars of Sick and Funeral Benefits which are offered under their Rules.

Name of Society.	Members' Benefits.		
	Rates of Sick Pay.	Funeral Donation.	Funeral Donation—Member's wife.
Australasian Holy Catholic Guild	After 6 months:— For 1st 26 weeks ..... 21/- For 13 weeks ..... 15/- " " ..... 10/- " 12 months ..... 5/- After which sick allowance ceases.	After 26, and less than 52 weeks ..... £10 After 12 months ..... £20 " 5 years ..... £25 " 10 " ..... £30	After 12 months ..... £10 Also, for unmarried member's mother after 12 months ..... £10
Ancient Order of Foresters—Sydney District.	* After 12 months:— For 6 months ..... 21/- " second 6 months 10/6 After 12 months continuous sick pay, the member is placed on the Superannuation Fund.	After 1 year ..... £20 " 5 years ..... £25 " 10 " ..... £30	After 12 months ..... £10 " 18 " ..... £15 On death of second wife £10
Ancient Order of Foresters—New England District.	After 6 months ..... 10/6 After 12 months:— For 26 weeks ..... 21/- " " ..... 11/- And thereafter, until placed on Superannuation Fund, 6/.	After 12 months ..... £15 And £1 for every additional 12 months up to £35.	After 12 months ..... £10 " 18 " ..... £15 On death of second wife £10
Grand United Order of Oddfellows	After 12 months:— First 6 months, not less than 18/-, or more than 21/-. Second 6 months ..... 12/6 Thereafter for a period of 12 months, 5/-.	After 12 months ..... £15 " 2 years ..... £20 " 5 " ..... £25 " 10 " ..... £30	After 12 months ..... £10 " 5 years ..... £12/10 " 10 " ..... £15
Grand United Order of Free Gardeners.	After 6 months:— First 6 months ..... 20/- Second " ..... 15/- Thereafter ..... 5/- (Without limit).	After 12 months ..... £20	After 12 months ..... £10
Hibernian Australasian Catholic Benefit Society.	After 6 months:— For 26 weeks ..... 20/- " 13 " ..... 15/- " " ..... 10/- Thereafter ..... 5/-	After 12 months ..... £20	After 12 months ..... £10
Irish National Foresters .....	After 6 months:— First 6 months ..... 10/- Second " ..... 5/- After 12 months:— First 6 months ..... 20/- Second " ..... 10/- Afterwards ..... 5/-	After 12 months ..... £20	After 12 months ..... £10
Independent Order of Oddfellows	After 6 months:— First 26 weeks ..... £1 Second " ..... 12/6 Thereafter, during the pleasure of the Lodge... 5/-	After 12 months ..... £20	After 12 months ..... £10

\* As given by Court Cowra, the last registered. The sick benefit varies in different Courts.

List of the Principal Orders, &c.—*continued.*

Name of Society.	Members' Benefits.		
	Rates of Sick Pay.	Funeral Donation.	Funeral Donation—Members' wife
Independent Order of Rechabites	After 6 months :— First 12 months ..... 20/- For next 6 months ... 10/- " " " " ..... 5/- Total sick pay limited to £71 10/-.	Full benefit ..... £25 Half " ..... £12/10 Juvenile members (after 6 months), £10.	£15 for wife. For child (after 6 months), £5.
Loyal Protestant Benefit Society...	For Male Members :— (After 12 months.) First 26 weeks ..... 21/- Second " ..... 12/-  For Female Members :— (After 12 Months.) First 13 weeks ..... 10/6 Second 13 weeks ..... 6/- Total sick pay not limited.	After 12 months ..... £20 " 10 years ..... £25 " 20 " ..... £30	After 12 weeks ..... £10
Manchester Unity Independent Order of Oddfellows.	After 6 months :— For the 1st 6 months... 21/- For the 2nd 6 months 15/- For the 3rd 6 months 10/- And afterwards..... 5/-	After 12 months ..... £30 " 5 years ..... £35 " 10 " ..... £40 " 15 " ..... £45 " 20 " ..... £50	After 12 months ..... £15
National Independent Order of Oddfellows.	After 12 months :— For 1st 6 months ..... 20/- " 2nd " ..... 10/- Afterwards, at the pleasure of the Lodge, a sum not exceeding 5/-.	After 6 months ..... £10 " 12 " ..... £20	After 6 months ..... £5 " 12 " ..... £10
Order of Royal Foresters.....	After 6 months :— First 6 months ..... 21/- Second " ..... 12/3 Afterwards ..... 5/-	Old Members :— After 12 months ..... £25 Extended funeral benefits :— After 12 months ..... £30 " 5 years ..... £35 " 10 " ..... £40 " 15 " ..... £45 New Members, after 6th September, 1895 :— After 12 months ..... £25 " 5 years ..... £30	After 12 months ..... £15
Protestant Alliance Friendly Society of New South Wales.	After 12 months :— First 6 months ..... 21/- Second " ..... 15/- Afterwards 5/-, the Lodge having power then to settle by a "final payment."	After 12 months ..... £25 " 5 years ..... £30	After 12 months ..... £15
Sons and Daughters of Temperance	After 12 months :— First 6 months ..... 21/- Second " ..... 15/- Afterwards, at the pleasure of the Division, not exceeding 5/-. Total Sick Pay limited to £52. (Half the above amounts all through for female members).	On death of male member :— After 12 months ..... £20 " 5 years ..... £25 " 10 " ..... £30 On death of female member :— After 12 months ..... £10 " 5 years ..... £12/10 " 10 " ..... £15	On death of male member's wife :— After 12 months ..... £10 " 5 years ..... £12 " 10 " ..... £15 On death of female member's husband :— After 12 months ..... £10
United Ancient Order of Druids—Sydney District.	After 12 months :— First 6 months ..... 21/- Second " ..... 15/- Afterwards ..... 5/-	After 12 months ..... £25	After 12 months ..... £15
United Ancient Order of Druids—Newcastle District.	After 12 months :— First 6 months ..... 20/- Second " ..... 10/- Afterwards ..... 5/-	After 6 months ..... £5 " 12 " ..... £20 " 5 years ..... £22/10 " 10 " ..... £25 " 15 " ..... £30	£12 10s.

\* Hope Lodge

## E 2.

To evidence of Mr. A. Davis.]

STATEMENT showing the position of the various Orders, together with Receipts and Expenditure for the year 1893, the amount of Funds at the beginning and end of the year; also the number of Members.

Name of Order.	Contributions.	Other Receipts.	Total.	Sick Pay.	Medical Attendance and Medicine.	Other Expenditure.	Total.	Funds at the beginning of 1893.	Funds at the end of 1893.	No. of Financial Members at the beginning of 1893.	No. of Financial Members at the end of 1893.	No. of Members Sick during 1893.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.			
Australasian Holy Catholic Guild	4,478 2 2	1,009 16 4	5,487 18 6	2,065 15 1	1,979 9 3	1,905 17 7	5,951 1 11	13,889 0 3	13,425 16 10	1,699	1,705	?
Ancient Order of Foresters— Sydney District.	10,977 13 3	2,149 3 3	13,126 16 6	2,885 4 11	3,953 7 2	5,270 19 4	12,114 11 5	19,439 19 10	20,452 4 11	3,332	3,432	596
Ancient Order of Foresters— New England District.	307 13 5	26 10 7	334 4 0	60 14 6	75 12 6	149 11 7	285 18 7	170 2 2	218 7 7	109	130	20
Grand United Order of Odd- fellows.	30,125 10 1	6,102 18 0	36,228 8 1	10,016 17 6	9,699 6 8	14,859 16 8	34,576 0 10	69,796 19 1	71,449 6 4	10,203	9,566	2,097
Grand United Order of Free Gar- deners.	4,938 15 6	553 8 9	5,552 4 3	2,040 4 10	1,016 17 11	2,453 12 1	5,540 14 10	3,585 8 7	3,596 18 0	1,975	1,820	?
Hibernian Australasian Catholic Benefit Society.	6,817 6 11	912 10 3	6,817 6 11	1,864 5 8	2,460 11 6	3,328 19 11	7,653 17 1	7,762 8 6	7,830 8 7	1,753	1,634	312
Irish National Foresters ...	731 6 0	64 2 1	845 8 1	50 3 4	223 18 8	313 19 3	588 1 3	256 18 3	514 5 1	188	178	17
Independent Order of Oddfellows	17,384 19 4	3,334 11 0	20,719 10 4	4,060 16 9	5,696 10 10	3,167 19 7	17,925 7 2	20,442 6 7	32,236 9 9	4,827	4,584	?
Independent Order of Rechabites	7,403 14 5	1,040 8 6	8,441 2 11	803 5 2	1,272 4 1	5,562 19 0	7,638 8 3	6,257 1 7	7,059 16 3	1,162	1,313	217
Loyal Protestant Benefit Society	2,619 19 4	133 7 11	2,758 7 3	678 12 11	916 1 4	1,012 5 10	2,506 19 3	2,400 2 11	2,651 10 11	914	852	162
Manchester Unity, Independent Order of Oddfellows.	61,280 6 6	17,734 0 5	79,014 6 11	17,560 18 10	19,079 10 3	33,574 17 11	70,215 7 0	199,529 9 10	208,328 9 9	17,599	17,656	3,139
National Independent Order of Oddfellows.	894 13 11	107 17 10	1,002 11 9	111 3 4	257 8 3	380 18 6	740 10 1	91 11 4	341 13 0	184	274	36
Order of Royal Foresters.	6,493 1 0	1,232 17 10	7,775 18 10	1,773 5 11	2,332 1 0	3,276 3 11	7,381 10 10	28,141 17 3	28,536 5 3	1,830	1,885	?
Protestant Alliance Friendly Society.	19,247 1 3	3,016 3 5	22,263 4 8	4,915 18 5	7,182 11 0	7,916 14 6	20,015 3 11	39,899 12 7	42,147 13 4	5,871	5,665	973
Sons and Daughters of Temper- ance	6,799 18 4	1,030 10 11½	7,830 9 3½	1,799 0 3	2,583 1 8	3,854 12 4½	8,236 14 3½	15,582 18 8½	15,176 13 8½	3,868	3,714	?
United Ancient Order of Druids— Sydney District.	15,404 17 10	2,876 19 2	18,371 17 0	3,303 3 2	7,210 15 3	6,182 14 8	16,693 13 1	13,984 13 11	15,659 17 10	4,997	4,992	?
United Ancient Order of Druids— Newcastle District.	2,723 19 0	372 2 8	3,096 1 8	1,236 5 2	334 7 4	1,158 11 0	2,729 3 6	8,276 2 1	8,643 0 3	1,082	989	276

APPENDIX.

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## F.

[Appended by the Committee.]

1894.

NEW ZEALAND.

## OLD-AGE PENSIONS COMMITTEE.

(Report of the, together with Appendix.)

*Brought up 27th September, 1894, and ordered to be printed.*

## ORDER OF REFERENCE.

*Extract from the Journals of the House of Representatives, dated the 26th day of June, 1894.*

*Ordered, "That a Committee, consisting of ten members, be appointed to examine into and report upon the question of making provision for old age, with power to call for persons and papers; three to form a quorum. The Committee to consist of Mr. Bell, Mr. Buddo, Mr. Green, Mr. Hall, Mr. G. Hutchison, Mr. W. Hutchison, Mr. R. McKenzie, Mr. Pirani, Mr. G. W. Russell, and the mover."—[Hon. Mr. CARROLL.]*

## REPORT.

THE Committee have the honor to report that they have had numerous meetings, and have had several specific schemes (copies of which accompany this report) before them for consideration. After mature deliberation they have arrived at the following resolutions:—

- (1.) That a system for the provision of pensions for the old of both sexes should be established by the State if a practicable method for providing the necessary funds can be devised.
- (2.) That, though it would for many reasons be desirable to fix the age for commencement of pensions at sixty years, the Committee are of opinion that it would not be within the scope of practicable finance to fix it below sixty-five.
- (3.) That all applicants for a pension must have resided in the colony for at least twenty years immediately previous to their application.
- (4.) No pension will be granted to any applicant who has been convicted of an indictable offence, unless he or she has received a free pardon from the Governor; or to anyone who has been convicted of drunkenness three times during the last seven years previous to his or her application.
- (5.) That every male and female pensioner should be entitled to a weekly sum of 8s., and in the case of a husband and wife the joint allowance be 15s. per week.

The subject, however, is so large, and has so many ramifications, that, with the limited time at their disposal, your Committee are unable to recommend any particular scheme without further statistics; and they are of opinion that the Government should appoint a Royal Commission during the recess to inquire fully into the question, take evidence as to the numbers and condition of the aged in the colony, the probable annual increase of such numbers, as to the financial methods possible; also that statistics be obtained giving the amount earned in wages by persons receiving less than £300 per annum, and as to the amount which will annually be required for the necessary provision, besides other questions which may be precedent to the determination of any of the various proposals.

The Committee desire to record their thanks to the officers of the Government with whom the Chairman had occasion to communicate for their uniform courtesy and readiness to afford such information as was required, especially to Mr. Richardson, the Commissioner of the Government Insurance Department, for the able and comprehensive *résumé* of schemes for old-age pensions as formulated in various countries of Europe.

Your Committee had also important evidence from Mr. Mark Cohen, of the *Dunedin Evening Star*, giving his view of old-age pensions as bearing upon Friendly Societies. His evidence is not attached because the Committee were unable to go exhaustively into that view of the question.

27th September, 1894.

WILLIAM HUTCHISON,  
Chairman.

## APPENDIX.

*Proposal by the Chairman.*

LOOKING at the precarious nature of the employment of working-men in the colony—one week in work and another out of it—only the smallest number of this class could contribute regularly to the establishment of any pension fund, and where the contribution cannot be general it would be unfair to make it particular. I am therefore of opinion that such a fund should be provided entirely by the State, as a compensation in old age to persons who have given their labour during all the best years of their life, at a very inadequate remuneration, for the public benefit.

Assuming the resolutions agreed to in the report as a basis on which to formulate a scheme of old-age pensions, we have to deal with the following figures, as supplied by the Registrar-General:—

Persons of sixty-five years of age and upwards in the colony number 15,359 (divided into 8,940 males and 6,419 females). These are the latest returns; and dealing with the figures therein more closely, it may be safely reckoned that one-third—it may possibly be more—of the above number (keeping in view the exceptions and limitations already noted) will not apply or be eligible for a pension, a reduction which leaves the result thus:—

Males .....	8,940	
Less one-third .....	2,980	
		5,960
Females .....	6,419	
Less one-third .....	2,139	
		4,280
		10,240
Of these 10,240 it may be reasonable to assume that 3,500 of them are married—husband and wife living together—and pensioned at £30 a year .....		£ 105,000
Males .....	5,960	
Less married men .....	3,500	
		2,460 at £20 16s. a year .....
Females .....	4,280	
Less married women .....	3,500	
		780 at £20 16s. a year .....
		16,224
		£172,390
A primage duty of 3 per cent. upon all imports, dutiable and free alike, will produce a revenue of .....		£195,243
Pensions .....		172,392
		£22,851

A PROPOSAL *re* STATE-AIDED INSURANCE OLD-AGE PENSIONS.

By Mr. D. Buddo.

THAT it is advisable that all persons over the age of sixty-five years who have lived in the colony of New Zealand for not less than twenty years, who have not been convicted of a crime for fifteen years, or of drunkenness for five years, and who have not been in receipt of charitable aid, shall be eligible to receive a pension if they have no other means of support. Such pension not to exceed 8s. per week, and be provided for as follows—and I might here print out that it is next to impossible to get statistics for my purpose; but, considering that all incomes of employees who do not contribute to income tax should contribute to the pension fund, I estimate that £12,000,000 is earned by employees earning less than £300 per annum in this colony. This at 1d. in the pound would give £50,000, and this to be collected by the Insurance Department would be a very expensive matter; but it could be easily and cheaply collected by making the employer collect it as receipt stamps on the receipt for wages, every sum given for wages from £1 upwards to bear a penny stamp for every £1 of the amount.

There are nearly 15,000 persons in this colony over the age of sixty-five years, and I estimate that one-quarter of that number, or 3,750, will be in a more or less needy condition and require a pension in their closing years. To provide this number with a weekly pension each of 8s. would require £78,000, and, possibly, liabilities in consequence of increased numbers and expenses might make up altogether £100,000.

I might say here that I believe 3d. should be provided for every £1 earned by employees earning less than £300 per annum, and that the employee should contribute two-fifths and that the State should find the other three-fifths, and that the average of this fund should, if it raises more than is required, be used to assist more, by lowering the age of those who would receive a pension rather than raising the rate of pension.

Further contingencies may occur that might require providing for, such as that the number of persons over sixty-five years of age that are indigent may amount to one-third the total number instead of one-quarter; and also for the next twenty-five years there will be a steadily-increasing number of old people as the colony grows older.

Therefore, I may fairly assume that the amount of 1d. in the pound from the employee and 2d. to be added from the State will eventually just about balance the liability.

In conclusion, I might add that no scheme based upon State-aided insurance lines can be made complete without evidence as to the indigent aged over sixty-five years, and also the amount of wages or salary earned by employees earning less than a specified amount; and I would here recommend that the Old-age Pensions Committee recommend the Government to appoint a Royal Commission to get evidence toward that end.

The Registrar-General to The Chairman, Old-age Pensions Committee.

Registrar-General's Office, Wellington, 9th July, 1894.

Sir,

In compliance with your request of the 5th instant, I enclose a statement of the population over sixty years of age, according to sexes, in groups of age-periods, and the number of deaths at those ages, for 1893.

With a population amounting to 672,265 persons (males 357,635, females 314,630), and the existing proportions at the various age-periods, there would be 28,402 persons (males 17,201, females 11,201) over sixty years of age to be provided for under a scheme of old-age pensions beginning with that year. Judging from the results of past censuses, the proportion to the whole population of persons over sixty years of age will increase by slow degrees, but regularly, for some time. Although there were 1,396 deaths of persons over sixty years of age during the year 1893, the number living and coming forward from the previous ages would be rather more than sufficient to replace these.

I attach another statement, which shows that the death-rate among males over sixty would be about 53.48 per 1,000 and among females 46.15 per 1,000. The rates are also given for groups of quinquennial periods of age between sixty and eighty years, to show the rapid advance in mortality at the higher age-periods. The results are arrived at from the experience of the period 1887-91, because the actual numbers living in March, 1886, and April, 1891, are ascertainable by the censuses of those years.

The question of cost of a scheme of pensions I take to be one for the Actuaries of the Government to work out, and the principle of any scheme would have to be settled before anything could be done.

For a proposal involving State aid and taxation to meet the same, I believe the Registrar and Actuary of Friendly Societies, Mr. E. Mason, has some information to afford. For a scheme of compulsory contributions there must be records of the work done by Mr. Frankland in 1884, before the introduction to Parliament of the Bill for national insurance; and beyond these the Actuaries of the Government Insurance Department no doubt have the very latest information on the subject.

I have, &amp;c.,

E. J. VON DADELSZEN,

Registrar-General.

William Hutchison, Esq., M.H.R.

MEAN POPULATION at each Age-period from Sixty Years upwards for the Five Years 1887-91, with the Yearly Average Number of Deaths registered, and the Death-rate per 1,000 living.

Ages.	Number living.		Deaths.		Rate per 1,000.	
	Males.	Females.	Males.	Females.	Males.	Females.
60-65 .....	6,332	3,320	202	90	31.90	23.56
65-70 .....	3,486	2,345	166	86	47.62	36.67
70-75 .....	2,039	1,557	140	91	68.66	58.45
75-80 .....	1,022	805	105	65	102.74	80.75
80 upwards .....	621	500	109	85	175.52	166.99
Total .....	13,500	9,036	722	417	53.48	46.15

Closely connected with the subject of old-age pensions is the question of providing annuities for orphan children left by fathers dying before they have attained the age of sixty-five. This matter is now claiming the attention of actuaries and others in England engaged in the investigation of State insurance schemes, and is a very important feature.

In order to be prepared with data for calculating the values of premiums for such family annuities, particulars as to the number and ages of all children left by married men dying between the ages of twenty and sixty-five have been taken from the death registers. These particulars have been arranged in tabular form and printed in the statistical volume for 1893. The results are shown in two tables (copies attached), one of which deals with the year 1893 only, the other showing the aggregate results of the four years 1890-93.

E. J. VON DADELSZEN.

Registrar-General's Office, 9th July, 1894.

ESTIMATED

ESTIMATED number of persons at each Age-period from Sixty Years upwards living in New Zealand on the 31st December, 1893; also the Number of Deaths registered during 1893.

Ages.	Estimated Number living, 31st December, 1893.			Actual Number of Deaths registered, 1893.		
	Males.	Females.	Total.	Males.	Females.	Total.
60-65 .....	3,261	4,782	13,043	281	118	399
65-70 .....	4,220	2,787	6,957	175	86	261
70-75 .....	2,682	2,014	4,696	177	102	279
75-80 .....	1,287	1,007	2,294	121	88	209
80-85 .....	501	472	973	93	62	155
85 and over.....	250	189	439	52	41	93
Total .....	17,201	11,201	28,402	899	497	1,396

#### DEATH-RATES of Married Men and Orphanhood of Children.

"THE Registration of Births and Deaths Act Amendment Act, 1882," requires that on the registration of the death of any person the age of each living child of the deceased shall be entered in the register. The particulars so recorded for several years have been tabulated, and the detailed results are shown in the two tables on pages 62 and 63 of the "Statistics of New Zealand, 1893." One of those tables deals with the year 1893 only; the other gives the aggregate results for the four years 1890 to 1893 inclusive. They show the total number of men who died at each year of age from twenty to sixty-five, the number of married men (husbands and widowers) stated in the registers to have died childless, the number who died leaving children living, and the number and ages of the children so left.

From the first table it is found that during 1893 there died 1,610 men between the ages of twenty and sixty-five, of whom 836 were married; 701 married men left children at their deaths; while 135 are stated to have been childless. The proportions of married men and bachelors in every 100 males dying were 51.93 and 48.07 respectively. The proportions at the census of 1891 for the total number living at the above ages were: Married men, 56.81 per cent.; bachelors, 42.92 per cent.; and unspecified, 0.27 per cent. The differences here shown would tend to prove that the death-rate amongst married men at the ages under review is lighter than amongst bachelors; but it must be borne in mind that when registering a death the informant is not always in possession of full particulars as to the conjugal condition of the deceased, and that therefore the number of married men as shown in the tables may be somewhat short of the actual fact.

Assuming the ratio of married men at twenty to sixty-five to the total male population at those ages to be the same in 1893 as obtained at the census of 1891, the death-rate is found to be 8.69 per 1,000 living, whereas the rate for all males at the same age-period was in 1891 9.60 per 1,000.

Ages.	1891.			1893.		
	Total Number of Males living at each Age-period.	Total Number of Male Deaths.	Death-rate per 1,000 living.	Estimated Number of Married Men living.	Number of Deaths of Married Men.	Death-rate per 1,000 living.
20-25 .....	28,337	148	5.22	2,473	5	2.02
25-30 .....	23,704	108	4.56	9,213	45	4.88
30-35 .....	22,021	114	5.18	13,668	45	3.20
35-40 .....	20,513	139	6.78	16,052	80	5.31
40-45 .....	17,755	139	7.83	13,444	87	6.47
45-50 .....	17,028	183	10.75	13,572	108	7.96
50-55 .....	16,770	272	16.22	13,534	143	10.57
55-60 .....	10,945	252	23.02	8,933	139	15.56
60-65 .....	7,685	227	29.54	6,319	134	21.12
	164,758	1,582	9.60	96,208	836	8.69

The total number of children left by the 836 married men who died in 1893 was 3,352. Of these, 1,577 were under fifteen years of age, 673 between fifteen and twenty-one, and 1,031 over twenty-one, leaving 71 in respect of whom no information could be obtained. Thus the average number of children of all ages left by each married man dying between twenty and sixty-five would be 4.01, or 1.89 under fifteen, 0.80 between fifteen and twenty-one, 1.23 over twenty-one years of age, and 0.09 of unspecified age. Discarding the number (135) of fathers said to have died childless, the average number of children left by each of the others would be 4.78 of all ages—2.25 under fifteen, 0.96 between fifteen and twenty-one, 1.47 over twenty-one, and 0.10 of unspecified age. Almost identical results are obtained if the figures for the four years 1890-93 be used instead of those for 1893 only.

Ages.	Estimated Number of Hus- bands and Widowers living in 1893.	Total Number of Male Deaths.	Number of Married Men who died.		Number and Ages of Children left.				
			Childless.	Leaving Children.	Under 15.	15 to 21.	21 and upward.	Unspeci- fied.	Total.
20-25 .....	2,473	154	2	3	3	.....	.....	.....	3
25-30 .....	9,213	161	14	31	61	.....	.....	.....	61
30-35 .....	13,668	167	8	37	103	.....	.....	6	109
35-40 .....	15,052	145	15	65	202	10	.....	11	223
40-45 .....	13,444	131	9	78	308	55	2	.....	365
45-50 .....	13,572	166	9	99	301	114	41	23	479
50-55 .....	13,534	249	22	121	272	177	192	12	653
55-60 .....	8,933	216	19	120	196	164	286	19	665
60-65 .....	6,319	281	37	147	131	153	510	.....	794
	96,208	1,610	135	701	1,577	673	1,031	71	3,352

An important fact brought out by the statistics quoted above is that every year upwards of 1,500 children under fifteen years of age are left fatherless—how many without adequate means of living it is not possible to say.



ORPHANHOOD OF CHILDREN.

TABLE showing the Total Number of Men who died at each Year of Age from 20 to 65 during the Four Years 1890 to 1893—continued.

Age at Death.	Total Number of Male Deaths.	No. of Married Men who died.		Number and Ages of Children.																				Total.	Number of Cases in which Children's Ages not specified.							
		Childless.	Leaving Children.																													
				0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20			20 to 21	21 and over.	Ages not specified.				
34-35	92	8	38	11	6	12	8	13	7	14	11	8	8	6	4	2	3	1	...	...	...	...	...	...	...	...	...	...	2	116	1	
35-36	143	15	48	10	15	13	17	14	14	14	16	13	10	10	9	4	3	3	1	...	...	...	...	...	...	...	...	...	8	174	3	
36-37	111	6	56	9	19	21	12	19	13	14	13	19	6	17	8	11	6	6	3	2	...	...	...	...	...	...	...	...	6	203	3	
37-38	108	9	60	11	9	18	18	13	14	15	20	16	13	16	10	12	6	4	4	3	...	...	...	...	...	...	...	...	15	218	4	
38-39	118	12	57	4	12	11	13	10	16	12	11	17	14	16	14	8	11	5	3	4	1	2	...	...	...	...	...	...	33	217	7	
39-40	94	12	46	7	10	14	13	14	9	17	9	10	11	14	12	9	13	9	6	4	1	3	...	...	...	...	...	...	4	190	2	
40-41	136	3	58	9	8	9	16	12	12	14	14	14	20	14	12	12	13	9	9	5	2	3	...	...	...	...	...	...	20	227	4	
41-42	94	7	50	8	9	10	10	12	14	9	17	11	15	12	15	14	11	13	10	7	3	4	...	...	...	...	...	...	1	17	224	2
42-43	137	10	76	11	14	18	9	22	22	20	18	22	26	23	16	25	21	18	20	14	6	5	5	1	4	4	4	4	353	1		
43-44	91	6	56	8	7	15	9	11	11	21	15	13	17	16	16	15	15	13	7	9	8	9	6	4	2	10	257	1	10	257	1	
44-45	96	9	46	9	6	10	15	7	12	13	18	10	13	15	13	16	13	13	8	8	11	10	7	5	10	17	259	3	10	259	3	
45-46	169	14	68	5	10	4	13	14	17	13	18	12	13	18	17	10	14	11	13	13	7	11	10	6	12	23	292	4	12	292	4	
46-47	125	12	70	6	5	14	11	13	17	14	13	16	14	20	18	15	14	21	16	20	14	11	11	14	39	17	523	4	17	523	4	
47-48	122	8	83	9	14	13	16	16	17	19	23	25	21	18	31	24	27	17	21	18	19	15	16	10	30	19	437	3	19	437	3	
48-49	146	10	81	2	2	8	6	11	7	9	14	19	17	20	22	20	17	22	19	18	14	16	17	14	55	27	376	6	27	376	6	
49-50	157	2	85	3	4	12	7	13	12	24	19	20	23	19	22	17	24	35	26	21	28	26	23	14	78	14	484	3	14	484	3	
50-51	252	22	107	3	7	10	20	14	13	20	24	18	23	26	22	28	24	36	18	32	27	26	25	15	124	52	610	8	52	610	8	
51-52	168	18	103	6	4	10	6	14	11	12	14	14	27	16	25	24	27	26	31	21	31	21	26	30	146	40	587	5	40	587	5	
52-53	194	17	102	2	6	5	6	11	11	15	13	15	28	21	28	32	26	24	24	36	16	29	31	150	48	601	9	48	601	9		
53-54	163	19	80	3	3	5	6	9	7	7	11	13	14	11	18	14	19	16	21	18	19	16	22	17	120	20	418	4	20	418	4	
54-55	217	17	117	2	3	8	4	10	4	12	16	20	18	17	21	23	25	23	28	22	32	25	34	19	183	91	640	16	91	640	16	
55-56	213	21	94	3	1	3	6	4	8	12	10	12	10	13	16	21	19	21	14	20	23	17	21	23	177	47	503	8	47	503	8	
56-57	187	18	112	4	1	5	3	6	5	14	10	12	15	15	12	17	22	27	22	28	18	30	27	27	247	65	632	12	65	632	12	
57-58	197	18	107	...	4	4	5	8	7	4	9	7	12	13	21	19	12	26	20	19	31	16	26	29	270	47	609	8	47	609	8	
58-59	194	18	109	2	3	5	5	7	12	9	10	13	11	14	18	11	16	14	17	18	23	19	27	24	269	46	578	9	46	578	9	
59-60	159	14	90	1	2	1	4	...	6	1	7	3	6	5	9	11	15	13	13	16	14	22	20	27	242	36	474	10	36	474	10	
60-61	237	24	120	4	5	2	4	5	6	15	6	8	9	17	14	15	19	25	21	14	27	18	20	35	282	69	639	11	69	639	11	
61-62	177	17	104	...	...	...	1	2	3	2	2	6	1	5	8	6	12	17	15	15	17	18	25	26	337	52	569	8	52	569	8	
62-63	198	23	105	2	2	2	2	2	3	6	3	6	9	10	7	13	9	12	11	18	19	18	22	21	347	20	574	4	20	574	4	
63-64	190	27	102	...	4	...	2	2	...	5	5	8	1	10	13	12	14	17	10	21	18	15	14	361	18	568	3	18	568	3		
64-65	152	17	95	...	2	1	1	1	1	4	1	2	1	5	4	4	8	9	9	16	12	19	16	22	368	39	545	7	39	545	7	
		6,355	523	2,700	238	272	355	323	368	351	422	418	424	438	458	479	464	487	506	447	445	460	419	451	434	3,853	954	13,469	184		184	

The Commissioner, Government Life Insurance Department, to The Chairman, Old-age Pensions Committee.

Government Life Insurance Department, Head Office, Wellington,

30th July, 1894.

Dear Sir,

Adverting to our conversations regarding the various schemes which have been suggested for dealing with the aged poor, I beg to inform you that I have asked the Actuary to prepare a synopsis of the papers in this department which relate to the matter. The synopsis has now been completed, and I hand you herewith twenty copies of it. I am sorry that they are a little blurred, but our machine is working badly. In case, however, they may not be entirely legible, I attach the original synopsis.

W. Hutchison, Esq.,  
Chairman, Old-age Pensions Committee.

And remain, &c.,  
J. H. RICHARDSON, Commissioner.

I.—A BRIEF SUMMARY OF STATE PROVIDENT SCHEMES PROPOSED DURING THE LAST FIFTEEN YEARS, BUT NOT YET ADOPTED.

THESE schemes may be classified in two leading divisions: Division A—those which demand specific contributions, to be applied to create a specific fund; and Division B—those which do not build up such a fund, but provide each year for the benefits out of some form of taxation. Division A may be subdivided into—(1) Compulsory schemes; (2) voluntary schemes. All the schemes will fall into one or other of these categories, as set forth in the following schedule:—

A.—Specific Contributions to create a Specific Fund.

1. The Blackley type, compulsory.
2. The Chamberlain type, voluntary.

B.—Pensions payable to all without Direct Contributions.

The Booth type, indirectly compulsory.

DIVISION A.—1.

1. Canon Blackley's Original Scheme.

Payments.—Every person to pay £10, or thereabouts, between eighteen and twenty-one.

Benefits.—Sick-pay 8s. a week till seventy, and pension 4s. a week after seventy.

This scheme was eventually modified by Canon Blackley, principally through the opposition of the friendly societies, by eliminating the sickness benefit and lowering the pension age to sixty-five.

2. Canon Blackley's Amended Scheme.

Payments.—(a.) £10 in a lump sum from all persons with means, through the tax or rate-collector. (b.) 1s. 3d. a week for three years between eighteen and twenty-one from wage-earners, the State paying half the premium. The fund to be valued yearly, and the payments to be increased if found necessary.

Benefit.—Apparently, 4s. a week pension after age sixty-five.

3. The Late Sir Harry Atkinson's Scheme (a Modification of Blackley's Scheme.)

Payments.—Every person to pay 2s. 3d. a week between sixteen and twenty-three, or 3s. 3d. a week between eighteen and twenty-three, and also 2s. a week between twenty-three and twenty-eight.

Benefits.—Sick-pay till sixty-five: 15s. a week single people, £1 2s. 6d. a week married men, and 7s. 6d. a week married women. Pension: 10s. a week after sixty-five. Widowhood benefit: 15s. to £1 10s. a week, according to size of family, till each child is fifteen. Orphanhood benefits: 10s. a week to each orphan under three, and 6s. a week from three to fifteen.

Every

Every man over twenty-three (excepting those provided for in friendly societies, and possibly excepting men over fifty) to be compelled to provide for 15s. a week sick-pay up to age sixty-five; weekly payments according to age.

It was proposed to maintain all the existing indigent people over sixty-five out of the Consolidated Fund. The above scheme would then provide for all the existing population except orphans and widows. Sir H. A. Atkinson made the following suggestions (not included in the scheme) to provide for existing widows and orphans: (1.) That existing orphans should be allowed to make lower payments between sixteen and twenty-three to become entitled to the benefits. (2.) That rents from Crown lands should be put aside in perpetuity to make a provision for the widows of the present generation till the scheme should be in full operation: estimated to take £30,000 a year.

Sir H. A. Atkinson also proposed to use the remainder of the land-rents to endow each child born with £5 or less, which should be invested till sixteen, and then set off against the payments required. Emigrants under twenty-three would come under the scheme; those over twenty-three would pay for sick benefits only. Immigrants to draw all benefits except sick-pay. No surrender values to be given on leaving the colony.

*Machinery for securing Premiums.*—The colony to be divided into districts, coterminous with local bodies, which would be intrusted with registration. Employers to stop payments from wages and pay into Post-Office Savings-Bank; the payments of well-to-do people to be a debt due to the Crown.

#### 4. Dr. Hunter's Original Scheme, for Scotland only.

The rates were as follows:—

Rate of Weekly Wages.		Weekly Payments till Sixty-five.			Benefits: Weekly Pension.	
		Workmen.	Employer.	State.	After Sixty-five.	Incapacity before Sixty-five.
s. d.	s. d.	d.	d.	d.	s. d.	s. d.
6 0	to 11 11	1	1	4	5 0	?
12 0	to 17 11	2	2	4	7 0	?
18 0	and upwards	4	4	4	10 0	10 0

Dr. Hunter has since merged his scheme with that of Mr. Chamberlain.

#### DIVISION A.—2.

##### 1. M. Constans' Scheme.

This scheme was embodied in a Bill brought forward in the French Chamber in 1891. It is open to all men and women of French nationality who at twenty-five are earning less than £120 a year. Any one can refrain from joining the scheme by objecting before a Magistrate. All who do not so object are assumed to wish to join, and their employers are compelled to deduct from their wages from 5 to 10 centimes a day, and contribute an equal amount. This is to be paid into the State office, and the State will add two-thirds of the combined contributions of masters and men. The pension received in return for this after age fifty-five is either £24 or £12 a year, whereas the contribution of the workman himself would have provided only £7 8s. 4d. or £3 14s. 2d. But if the workman has an income of more than £24 at age fifty-five he loses the State grant entirely. The Bill also provides for the payment of their pensions to contributors who have become permanently incapacitated through sickness, and for the relief of those who may be obliged on account of accident to interrupt their payments into the fund. Every contributor may insure his life under certain conditions, the State also contributing one-third of the premium. There are also provisions relating to those of the present generation over twenty-five.

One of the suggestions for raising the necessary funds was a sliding scale of succession duty, rising from 1 per cent. to as high as 75 per cent.; and M. Constans proposes to raise £1,100,000 per annum for the fund by taxing every foreign workman employed in France 10 centimes a day.

##### 2. Italian Scheme.

This was embodied in a Bill brought before the Chamber in 1892, which provides for a National Pension Institute, to administer funds subscribed by authorised savings-banks and friendly societies, by individuals, and by the State. Every Italian working-man or woman may subscribe to the extent of £20 per annum, and is then entitled at age sixty, and after twenty years' payments, to a pension proportioned to his or her accumulations, but not exceeding £20 per annum, any surplus capital being returned with interest. At death before sixty all contributions, with interest are returned to representatives.

##### 3. Mr. Chamberlain's Original Scheme.

This scheme provided for voluntary contributions towards a pension after sixty-five, based on 2½ per cent. interest, while the State was to guarantee their accumulations at the rate of 5 per cent. It was abandoned for—

##### 4. Mr. Chamberlain's Second Scheme.

Payments to be made to the Post Office or a friendly society.

*Payments.*—Men: For every £5 paid before twenty-five, the State gives £15. From twenty-five to sixty-five, forty annual payments of £1 have to be made.

*Benefits.*—5s. a week pension after sixty-five. At death before sixty-five—(a), 5s. a week for the widow for twenty-six weeks; (b), 2s. a week for each child till twelve years old (but not to exceed 12s. in all for the first twenty-six weeks, and 8s. a week afterwards); (c), if neither widow nor children are left, the original £5 to be returned to the depositor's representatives at his death.

Every man under twenty-five may insure for 5s. a week pension, but not more than 10s. a week.

*Payments.*—Women: For every £1 10s. paid before twenty-five the State gives £8; from twenty-five to sixty-five, forty annual payments of 8s. 8d.

*Benefits.*—3s. a week pension after sixty-five.

##### Alternative Scheme for Men.

*Payments.*—Men: For every £2 10s. paid before twenty-five the State gives £10; from twenty-five to sixty-five, forty annual payments of 10s.

*Benefits.*—5s. a week pension after sixty-five.

For men over twenty-five and under fifty at the time of the commencement of the scheme the annuitant must have secured a pension of 2s. 6d. a week, and pay in from £4 to £10, and the State will double the pension.

##### 5. Mr. James Rankin's Scheme.

It is based on two main principles: (1.) That the contractors for pensions be required to make a contribution from their own resources. (2.) That the contract be only aided by the State if effected through some financially sound organisation—a friendly society or annuity office, a pension trust fund established by Parliament, or the Post Office.

For every annuity of 2s. 6d. after sixty-five provided by the member, the State gives another of the same amount, making the total annuity 5s. a week after sixty-five. At death before sixty-five, nominee to receive a sum not exceeding £5.

Every contributor who has completed payments to receive a certificate which will entitle him or her to any "provident relief which may be necessary during life, in the form of out-door relief, if so desired."

##### 6. Mr. Naylor-Layland's Scheme.

This is a variation of Mr. Chamberlain's. Investments are to be made only in the National Debt. Friendly societies are to be allowed to employ their agents to collect the premiums, in return for which they have the use of the money for an average of six months.

7. *Mr. Vallance's Scheme.*

Voluntary as regards the workmen, but compulsory as regards the employer. This is a proposal to encourage workmen to put by small sums weekly (1d. or 3d. in the pound on their wages), by compelling employers to add a similar sum. The workmen's payments may be withdrawn with interest at any time, but the employers' payments with interest will only be paid at death before sixty-five. After sixty-five the total goes to purchase pensions. This is very similar in principle to the scheme of M. Constans, except that the French scheme is State-aided.

8. *Mr. T. Fatkin's Scheme.*

This scheme points to the investment of savings, under the management of municipal bodies, in local securities yielding a higher rate of interest than that given by the Government, the compound interest on which, at 3 or 3½ per cent., would give greater benefits to the investor.

9. *Sir Robert Stout's Scheme.*

This is an old-age pension scheme pure and simple. The State is to guarantee a rate of interest equal to 5 per cent. on all investments. If this is done, £50 accumulated before age 25 will serve to provide a pension of 17s. 6d. per week after age 60.

## DIVISION B.

1. *Mr. Booth's Scheme.*

This scheme is simplicity itself, except as the means of raising the money. It proposes simply that every person reaching the age of sixty-five should be entitled, without a specific contribution, to a minimum pension of, say, 5s. a week for the rest of his life.

2. *Rev. Moore Ede's Scheme (outlined at the 1892 Session of the British Association).*

This is a combination of Mr. Booth's system of universal pensions with an attempt to endow thrift. It is to be administered by County Councils, and is supposed to encourage thrift and abolish outdoor relief. Inability to claim pension will leave no alternative but the workhouse. It is limited to those with an income under £50. 2s. 6d. per week is to be granted to those incapacitated before age 65, and a pension of 2s. 6d. a week after 65, provided they can so supplement this allowance from any private source as to maintain themselves without any further recourse to State aid.

3. *Mr. Bartley's Scheme (Old-age Provident Pensions Bill).*

Based on the lines of the existing poor-law system. It provides for three classes of pensions (ranging from 3s. 6d. to 7s. per week): (1) To those who have never received any poor relief; (2) to those who have provided partially in some way for their old age, in any manner which they may have preferred; (3) to those whose special misfortunes render them deserving of aid though they have not been able to provide even partially for themselves. It also provides for the imposition of a special rate to be called the pension rate, replacing the poor rate. It is limited to those of sixty-five, who will not be eligible unless they have a clean record, and have been unconvicted of crime for fifteen years, or drunkenness for ten years. The object of the Bill is to help the deserving poor, and leave the undeserving to the poor laws.

4. *Mr. T. W. Fowle's Scheme.*

He advocates the gradual extinction of outdoor relief in not less than twenty-five years, and the allocation to the friendly societies of the sums thus saved (which he estimates at £3,000,000 per annum) on condition that they should guarantee a sufficient maintenance to all their members permanently disabled by sickness or old age.

5. *Rev. J. F. Wilkinson's Scheme.*

District Councils shall be empowered to grant a minimum maintenance endowment of 5s. a week to all aged persons who send in a demand note, except such as are held to have forfeited their pension—these to go to the workhouse. The pension to begin when decay of working-powers becomes manifest. Municipal or village cottages to be purchased or erected by the Councils, and let for a small weekly sum to aged inhabitants. The old-age endowment fund to come from Imperial rather than local taxation.

## II.—A BRIEF SUMMARY OF STATE PROVIDENT SCHEMES NOW BEING ADMINISTERED IN VARIOUS COUNTRIES.

(A—1.) *The German System.*

The complete scheme was brought into operation gradually between 1883 and 1889 by—(1) The Sickness Insurance Law of 1883; (2) the Accident Insurance Laws of 1884 and 1885; (3) the Law of Insurance against Invalidity and Old Age, 1889.

## Payments.

*Sickness.*—1½ to 2 per cent. of earnings: one-third paid by employer, two-thirds by employé.

*Accident.*—2 per cent. of earnings: all paid by employer, nil by employé.

*Old Age, &c.*—1½d. to 3d. per week: half paid by employer, half by employé.

The sickness and accident laws apply to the whole of the wage-earning class, i.e., upwards of twelve millions of workpeople.

The old-age law is compulsory upon all men and women over sixteen in the following three classes: (1.) Persons who are employed as workmen, assistants, apprentices, or servants, and receive for their service a payment or wage. (2.) Persons who are engaged in business as assistants in shops, and apprentices whose yearly earnings do not exceed £100. (3.) Persons employed for payment or wage as members of the crews of German ships.

## Benefits.

*Sickness.*—A minimum of free medical attendance and medicine, and one-half daily wages; or free admission to hospital, with one-half sick-pay for family. Six benefit runs for thirteen weeks only, and member then goes on to the accident fund. Women receive sick-relief for four weeks after confinement. Burial-money is paid equal to twenty times the average daily wages.

*Accident.*—Two-thirds average wages during total, and less during partial, disablement. Burial-money in fatal cases, and allowances to widows, children, and parents.

*Old Age and Invalidity.*—After five years an invalidity allowance, ranging from £5 14s. 8½d. to £7 0s. 3d. per annum, and a pension after seventy, ranging from £5 6s. 5d. to £9 11s. per annum, according to the wages, which are divided into four classes. If death occurs before seventy, one-half of contributions are returned.

(B.) *The Danish System (under the New Law of 1891).*

The leading principle of this law is that after age 60 there shall be two classes of assisted poor—the *deserving* poor, in receipt of pensions; and the *undeserving* poor, in receipt of poor-law relief. It is administered by local authorities, called Communal Councils, who are assisted by the Government to the extent of £111,000 per annum, derived from a tax on lager beer.

All persons over sixty who are unable to maintain themselves, who have been in the country ten years, have never been convicted of crime, and who can prove that they have not received poor-law relief or been convicted of vagrancy or begging for ten years, may claim a pension. The Council then makes inquiries, and if they find that the poverty is not caused by extravagance or evil living, or by transference of property to relations or others, they are bound to allow a pension. If the pensioner should hereafter be guilty of any penal offence, squander his pension, or marry and require a larger measure of support, he is transferred to the poor-law and becomes an ordinary pauper.

Persons now living who are over sixty may receive pensions if their record has been clear between the ages of fifty and sixty.

The pensions are very indefinite, and may be given in money or kind, or by admitting to any institution, provided no workhouse people are inmates, at the discretion of the Communal Council. Very great care is taken to dissociate the old-age relief from the parish relief. Workhouse officials cannot be employed in any way in connection with the old-age relief, and the money is not raised by the poor-rate, but by a special rate levied in each commune. A writer in the *London Globe* says that the law is very popular with all classes of Danes but loafers, whose lot is made harder by it.

(B.)

(B.) *The Austrian System.*

Under the Austrian poor-law it appears that a man can claim a pension. The Emperor Joseph II decided that at sixty a man should have the right to claim from his native town or commune a pension equal to one-third of the average daily wage he had received during his working years. This pension was to be regarded in exactly the same light as a soldier's pension—not as a charity, but as a reward for past services. MORRIS FOX.

WEEKLY PAYMENTS at age 16 necessary to purchase a Pension of 10s. a week under a Compulsory State Scheme in New Zealand.

Pension after Age 60.			Pension after Age 65.	
s.	d.		s.	d.
3	3	Payments cease at 21 (5 years)	1	11
2	5	„ at 23 (7 years)	1	5
1	9	„ at 26 (10 years)	1	1
1	6	„ at 28 (12 years)	0	11
0	9	„ when pension commences	0	6

The Registrar, Friendly Societies, to the Chairman, Old-age Pensions Committee.

Sir,

Friendly Societies Registry Office, Wellington, 10 July, 1894.

In reply to your inquiry as to the bearing of a scheme for providing old-age pensions of small amounts upon the operations of friendly societies, I have the honor to point out that, unless the principle of the scheme be defined, it would be difficult to say whether the establishment of a pension fund would interfere with the thrift of friendly-society members.

1. Is it proposed that the pension shall be provided out of (a) general taxation, (b) contributions of individuals, (c) partly taxation and partly contribution?

I think that a voluntary-pension scheme may be dismissed from consideration, because the number who would take advantage of an optional insurance benefit, however attractive it might be made, would be few, and, in such case, special legislation would not seem necessary. The possible objection of members of friendly societies to a compulsory-pension scheme is that it might prevent many members from joining who were unable to contribute for both insurances. This view appears to prevail among friendly societies in England. I do not think that this objection would apply so forcibly in New Zealand, at least in respect of workers in constant employment.

2. The first question having been decided, is it proposed to grant the pension to all, or to those only who are in need. The members of friendly societies, and the thrifty classes generally, would probably disapprove of the latter principle. I respectfully suggest that the opinions of leading members of friendly societies be taken, as I do not feel entitled to speak from their point of view.

If the scheme is to be based on the principle of encouragement to thrift, perhaps it might be thought well to grant the pension to members of friendly societies under certain conditions. This proposal is put forward by the Grand Master of the Manchester Unity of Oddfellows in England; but I should add that the majority of the leaders of English friendly societies appear to object to State help in any form.

In order to give you some idea of the cost, I submit the following figures:—At age 60 the present value of £1 a year for life, payable quarterly, calculated on a New Zealand mortality table at 4 per cent. per annum, is £10.33. At that age, therefore, the present value of a life annuity of £26 (10s. a week) is £268. At the census in 1891, the number of persons aged 60 and upwards was 26,374. The present number of such persons may be put at 30,000. In order, therefore, to provide a life annuity of £26 to each person above 60 years of age, immediate additional taxation would be required to the amount of £780,000 per annum. As the percentage of persons above 60 years of age is rapidly increasing, it may be reasonably assumed that, when the population of the colony reaches 1,000,000, more than 8 per cent. will be above that age. On this assumption, the annual charge for pensions would then exceed £2,080,000. Ultimately the ratio of pensioners to the total population will probably rise as high as 15 per cent. Moreover, unless sufficient safeguards are provided, the normal ratio of pensioners to population will be exceeded. Also, should population increase in greater ratio than taxable values, a tax whose amount varies as the population tends to become more and more burdensome.

The above figures do not include cost of management or collection of tax.

I have, &c.,

EDMUND MASON,

Registrar, Friendly Societies.

W. Hutchison, Esq., M.H.R., Chairman, Old-age Pensions Committee.

## F 2.

[Appended by the Committee.]

(Hon. Mr. Seddon.)

## OLD-AGE PENSIONS.

## ANALYSIS.

- |   |  |
|---|--|
| Title.  | 28. Provisional investigation of pension-claims.                     |
| Preamble.   | 29. Pension-claims may be amended.                                   |
| 1. Short Title.   | 30. Transfer to another district, and duplicate pension certificate. |
| 2. Persons entitled to pensions, and amount. Proviso.         |  |
| <i>Districts and Registrars.</i>                              | <i>Payment of Pensions.</i>  |
| 3. Districts.   | 31. When and where pension payable.                                  |
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| 5. Registrar and Deputy Registrars.                           | 33. To be applied for within fourteen days.                          |
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| 7. Pension-claim.   | 36. Payment under warrant of Deputy Registrar.                       |
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| 9. Register of claims.  | 38. When pension not payable. Payment towards maintenance.           |
| 10. Pension-claims to be numbered.                            | 39. Pensions absolutely inalienable.                                 |
| 11. Deputy Registrar to investigate.                          | 40. Returns to be prepared by Deputy Registrars.                     |
| 12. May administer oaths.                                     | 41. General Register.  |
| 13. Evidence to be corroborated.                              | <i>Miscellaneous.</i>  |
| 14. How pension-claim to be dealt with.                       | 42. Pensions payable at money-order offices.                         |
| 15. Issue of pension certificate.                             | 43. Particulars to be furnished to Postmaster-General.               |
| 16. Particulars to be entered in pension register.            | 44. Postmasters to keep registers.                                   |
| 17. Pension certificates to be numbered.                      | 45. Payment to Postmaster-General to meet claims.                    |
| 18. Deputy Registrar may postpone claim.                      | 46. Alternative modes of raising moneys for payment of pensions.     |
| 19. Mode of rejecting claim.                                  | 47. Old-age Pension Fund Account.                                    |
| 20. Appeal when claim rejected.                               | 48. Expenses of administering Act.                                   |
| 21. Points to be deemed proved for appeal.                    | 49. Deficiency payable out of Consolidated Fund.                     |
| 22. Not to be bound by strict rules of evidence.              | 50. Annual statement to be laid before Parliament.                   |
| 23. Points established to be specified when appeal dismissed. | 51. Regulations.   |
| 24. Matters to be distinguished.                              | Schedules.   |
| 25. As to matters disproved.                                  |  |
| 26. As to matters unproved.                                   |  |
| 27. Procedure when appeal allowed.                            |  |

Title.	A BILL INTITLED AN ACT TO PROVIDE FOR OLD-AGE PENSIONS.
Preamble.	WHEREAS it is equitable that all persons who during the prime of life have helped to bear the public burdens of the colony by the payment of taxes, and to open up its resources by their labour and skill, should in old age be protected by the colony against the risk of want : Be it therefore enacted by the General Assembly of New Zealand in Parliament assembled, and by the authority of the same, as follows :—
Short Title.	1. The Short Title of this Act is "The Old-age Pensions Act, 1896."
Persons entitled to pensions, and amount.	2. (1.) Subject to the provisions of this Act, every person who at any time after the coming into operation of this Act attains the full age of <i>sixty-five</i> years or upwards shall thereafter be entitled to a pension of <i>ten</i> shillings per week for the rest of his life :
Proviso.	Provided— (a.) That he is residing in the colony on the date when he establishes his claim to the pension ; and also (b.) That he has so resided for, in all, not less than <i>twenty</i> years on such date ; and also (c.) That he has so resided continuously for not less than <i>three</i> years immediately preceding such date ; and also (d.) That he has not been absent from the colony for, in all, more than <i>eighteen</i> months during the period of <i>ten</i> years immediately preceding such date ; and also (e.) That his total income from all sources (exclusive of his personal earnings and his pension) does not exceed the rate of <i>fifty</i> pounds per year ; and also (f.) That he is the holder of a pension certificate as hereunder provided. (2.) For the purposes of this section a person whilst in prison shall be deemed to be absent from and not residing in the colony.
Districts.	3. For the purposes of this Act the Governor may from time to time divide the colony into such districts, with such names and boundaries, as he thinks fit.
Alteration of boundaries.	4. If any such district is constituted by reference to the boundaries of any other portion of the colony, as defined by any other Act, then any alteration in such boundaries shall take effect in respect of such district without any further proceedings, unless the Governor otherwise determines.
Registrar and Deputy Registrars.	5. (1.) The Governor may from time to time appoint a Registrar, who, subject to the control of the Colonial Treasurer, shall have the general administration of this Act. (2.) The Governor may also from time to time appoint in and for every such district a Deputy Registrar and such other persons as he deems fit.
Powers and duties of Registrar and Deputy Registrars.	6. Subject to the provisions of this Act the Registrar and every Deputy Registrar and other person appointed as aforesaid shall have such powers and duties as the Governor from time to time determines.
PENSION CLAIMS AND PENSION CERTIFICATES.	
Pension claim.	7. Every person, male or female, claiming to be entitled to a pension under this Act shall deliver his claim (herein after called a "pension claim") to the Deputy Registrar of the district wherein the claimant resides.
Form thereof.	8. The pension claim shall be in the form or to the effect set forth in the <i>First</i> Schedule hereto, with all such modifications as the particular circumstances of the case require.
Register of claims.	9. The Deputy Registrar shall in the prescribed manner file the claim, and record it in a book to be called "The District Old-age Pension-claim Register" ; such register shall be in the prescribed form.
Pension claims to be numbered.	10. All pension claims shall be numbered consecutively in the order in which they are entered in the register, and no two pension claims shall bear the same number in the same register.
Deputy Registrar to investigate.	11. The Deputy Registrar shall fully investigate the pension claim for the purpose of ascertaining whether or not the claimant is entitled to the pension.
May administer oaths.	12. For the purposes of such investigation he may administer an oath, and require evidence to be given on oath.
Evidence to be corroborated.	13. No pension claim shall be admitted unless the evidence of the claimant is corroborated on all material points.
How pension claim to be dealt with.	14. The Deputy Registrar may admit the pension claim, or postpone it for further evidence, or reject it, as he deems equitable ; and his decision shall be notified to the claimant in the prescribed manner.
Issue of pension certificate.	15. If the Deputy Registrar is satisfied that the claimant is entitled to the pension he shall issue to him a pension certificate in the form or to the effect set forth in the <i>Second</i> Schedule hereto.
Particulars to be entered in pension register.	16. The Deputy Registrar shall also enter in a book, to be called "The District Old-age Pension Register," the claimant's full name, occupation, and address, the number of the pension certificate, and the date from which the pension commences, being in every case the first day of the calendar month next after the date on which the pension certificate is issued.
Pension certificates to be numbered.	17. All entries of pension certificates in the Old-age Pension Register shall be numbered consecutively, so that no two entries in the same register shall bear the same number.
Deputy Registrar may postpone claim.	18. If the Deputy Registrar is of opinion that, although the claim is not completely established, further evidence may be adduced in support thereof, or it may be mended by lapse of time, he shall postpone the claim if the claimant so desires, and in such case all matters as to which the Deputy Registrar is satisfied shall be recorded as proved, and it shall be unnecessary to prove them again.
Mode of rejecting claim.	19. If the Deputy Registrar is satisfied that the pension claim is not established, and cannot be mended by postponement for a reasonable time, he shall reject it, and when doing so shall specify in writing all the material points which he finds to be respectively proved, disproved, and not to be proved.
Appeal when claim rejected.	20. At any time within twenty-one days after the rejection of his pension claim the claimant may in the prescribed manner appeal to any Stipendiary Magistrate exercising jurisdiction in the locality.
Points to be deemed proved for appeal.	21. All the material points in support of the pension claim which the Deputy Registrar has found to be proved shall, for the purposes of the appeal, be deemed to be established.
Not to be bound by strict rules of evidence.	22. Neither the Deputy Registrar in investigating any pension claim, nor the Magistrate in hearing any appeal, shall be bound by the strict rules of evidence, but each of them shall investigate and determine the matter by such means and in such manner as in equity and in good conscience he thinks fit.
Points established to be specified when appeal dismissed.	23. If the Magistrate dismisses the appeal, he shall state in writing his reason for so doing, and specify the material points which the claimant has established and those which he has failed to establish to his satisfaction.
Matters to be distinguished.	24. In disposing of material points against the claimant the Deputy Registrar and the Magistrate shall distinguish between what they find to be disproved, and what they find to be simply unproved, or insufficiently proved.
As to matters disproved.	25. In respect of what is found to be disproved the Deputy Registrar's decision, unless successfully appealed against, and the Magistrate's decision when disposing of the appeal, shall be final and conclusive for all purposes.
As to matters unproved.	26. In respect of what is found to be simply unproved or insufficiently proved, the Magistrate's decision shall be final and conclusive so far as concerns the appeal ; but the claimant may at any time thereafter adduce fresh evidence on those points before the Deputy Registrar, and in such case all material points previously found by the Deputy Registrar or the Magistrate to be proved shall be deemed to be established, and the Registrar shall dispose of all other points as in the case of a new pension claim.
Procedure when appeal allowed.	27. If the Magistrate allows the appeal, and declares the pension claim to be proved, the Deputy Registrar shall make the entries and issue the pension certificate in respect thereof accordingly.
Provisional investigation of pension claims.	28. In order to facilitate the adjustment of pension claims, they may be filed and provisionally investigated at any time not exceeding <i>two</i> years before the date on which the claimant alleges that his pension should commence ; but no pension claim shall be finally admitted, nor shall any pension certificate be issued, until all the conditions prescribed in respect thereof by this Act have been fulfilled.
Pension claims may be amended.	29. The pension claim may, in the prescribed manner, be amended from time to time on any point which has not been finally disposed of by the Deputy Registrar or the Magistrate, and the claimant's statutory declaration in the original claim shall be deemed to extend and apply to every such amendment.
Transfer to another district, and duplicate pension certificate.	30. On application in the prescribed form, and subject to prescribed conditions,— (1.) Any pension certificate may be transferred from the register in one district to the register in another. (2.) The Deputy Registrar may issue a duplicate pension certificate in any case where satisfactory proof is given of the loss of the original.

## APPENDIX.

## PAYMENT OF PENSIONS.

31. Every pension shall be payable by weekly instalments at the post-office money-order office named in the pension certificate. When and where pension payable.
32. On application in the prescribed manner the name of such office may be changed from time to time, and every change of office shall be recorded by the Deputy Registrar on the pension certificate. Place of payment may be changed.
33. The instalment for each week shall be payable at any time during the following fourteen days on the personal application of the pensioner and the production of his pension certificate to the Postmaster of the post-office money-order office named therein. To be applied for within fourteen days.
34. In default of strict compliance with all the provisions of the *last-preceding* section hercof, such instalment shall be deemed to be forfeited, unless the forfeiture is waived under the provisions in that behalf hereinafter contained. When instalment forfeited.
35. The Deputy Registrar, by warrant in the prescribed form, may waive any such forfeiture in any case where, after investigation, he is satisfied,— When Deputy Registrar may waive forfeiture.
- (1.) That, if the forfeiture was occasioned by default of personal application for payment, or of application within the prescribed time, such default was due to the pensioner's illness, or temporary absence from the place (but not from the colony), or other sufficient cause; or
- (2.) That, if the forfeiture was occasioned by default in producing the pension certificate, such default was due to its being lost or mislaid :
- Provided—
- (a.) That, except in special cases of the pensioner's serious illness or debility, it shall not be lawful for the Deputy Registrar to issue two such warrants in succession to the same pensioner; and also
- (b.) That in no case shall any such warrant be issued unless it is applied for within fourteen days after the forfeiture occurred.
36. The instalment named in any such warrant shall be payable at any time within fourteen days after the date thereof, on the personal application of the pensioner or other the person named therein, and also the production of the warrant, and (except where the warrant otherwise provides) of the pension certificate, to the Postmaster of the post-office money-order office named in the warrant. Payment under warrant of Deputy Registrar.
37. In default of strict compliance with all the provisions of the *last-preceding* section hercof, the warrant shall be deemed to have lapsed, and the forfeiture of the instalment named therein shall become absolute. When warrant deemed lapsed.
- 38 (1.) No pension shall be payable for any period during which the pensioner is either in prison or out of the colony, or possesses an income (exclusive of his personal earnings and his pension) at the rate of not less than fifty pounds per year, and the instalments for such period shall be deemed to be absolutely forfeited. When pension not payable.
- (2.) The pension for any period during which the pensioner is detained or maintained in any asylum or charitable institution shall be paid to the manager thereof, and applied towards the pensioner's maintenance therein. Payment towards maintenance.
- (3.) If any pensioner by any means obtains or attempts to obtain payment of any instalment of pension for any such period, or for any part thereof, or obtains or attempts to obtain payment of any instalment of pension by personation or any other fraudulent device whatsoever, he is liable to imprisonment for not more than *three* months. Penalty.
39. The pension being for the personal support of the pensioner, it shall (subject to the provisions of the *last-preceding* section hercof) be absolutely inalienable, whether by way of assignment, charge, execution, bankruptcy, or otherwise howsoever. Pensions absolutely inalienable.
40. Every Deputy Registrar shall, in the prescribed manner and at prescribed intervals, prepare and forward to the Registrar a return showing— Returns to be prepared by Deputy Registrars.
- (1.) All pension certificates and warrants issued by him; and
- (2.) Such other particulars as are prescribed.
41. The Registrar shall from the aforesaid returns compile a General-Old-age Pension Register containing a record of all pension certificates for the time being in force, and such other particulars as are prescribed. General register.

## MISCELLANEOUS.

42. The instalments of pensions shall be paid at the various post-office money-order offices, pursuant to arrangements to be made between the Colonial Treasurer and the Postmaster-General. Pensions payable at money-order offices.
43. For such purpose the Registrar shall from time to time furnish to the Postmaster-General schedules showing the names of the pensioners, the numbers of their pension certificates, and the dates on which and the post-office money-order offices at which the instalments in respect thereof are payable, and the Postmaster-General shall pay the same accordingly. Particulars to be furnished to Postmaster-General.
44. Every Postmaster at whose office instalments of pensions are payable shall keep a register in the prescribed form, showing particulars of all instalments paid, unpaid, and forfeited, and shall, at the close of each week, forward to the Postmaster-General a true copy of all entries made in such register during the week. Postmasters to keep registers.
45. (1.) The Postmaster-General shall periodically tabulate all such entries, and furnish to the Registrar a copy thereof, together with a statement of the total amount paid in respect of pensions during the period. Payment to Postmaster-General to meet claims.
- (2.) The Registrar, after satisfying himself that such statement is correct, shall certify to the accuracy thereof, and forward it to the Colonial Treasurer; whereupon the Colonial Treasurer, without further appropriation than this Act, shall pay the said amount to the Postmaster-General out of the hereinafter-mentioned Old-age Pension Fund Account.
46. The moneys from time to time required for the payment of pensions shall be raised in such one or more of the following modes as Parliament thinks fit to hereafter determine by enactment, that is to say :— Alternative modes of raising moneys for payment of pensions.
- (1.) A primage duty on imports, not exceeding one per cent. *ad valorem*;
- (2.) An increase of the excise duties;
- (3.) A graduated income-tax;
- (4.) An increase of the graduated land-tax;
- (5.) An increase of the death-duties by graduation;
- (6.) An increase of the stamp duties by graduation or otherwise;
- (7.) A tax on mortgages;
- (8.) A ticket-tax on entertainments;
- (9.) The totalisator-tax;
- (10.) Such other forms of taxation as Parliament thinks fit to impose.
47. All moneys raised as aforesaid shall be paid into the Public Account to the credit of an account called the Old-age Pension Fund Account. Old-age Pension Fund Account.
48. All expenses incurred in administering this Act (other than the payment of pensions) shall be payable out of moneys to be from time to time appropriated by Parliament out of the Old-age Pension Fund Account for that purpose. Expenses of administering Act.
49. If the balance in that account is at any time insufficient to meet the charges thereon the Colonial Treasurer, without further appropriation than this Act, may transfer from the Consolidated Fund and pay into that account whatever moneys may be necessary in order to meet the deficiency. Deficiency payable out Consolidated Fund.
50. The Colonial Treasurer shall, within thirty days after the close of each financial year ending the 31st day of March, prepare and lay before Parliament, if sitting, or, if not sitting, then within fourteen days after the commencement of the next session, a statement showing for such year— Annual statement to be laid before Parliament.
- (1.) The whole receipts and disbursements of the Old-age Pension Fund Account;
- (2.) The total number of pensioners;
- (3.) The total number of absolutely forfeited instalments; and
- (4.) Such other particulars as are prescribed.
51. The Governor may from time to time make such regulations as he thinks necessary for the purpose of giving effect to whatever is expressed in this Act as prescribed, and, generally, of carrying out the intention of this Act. Regulations.

## SCHEDULES.



6. The Superintendent of any Workhouse to which any person shall be committed as aforesaid shall have the custody and control of such person until he shall be discharged as hereinafter mentioned.
7. If any person so committed to any Workhouse shall before his discharge be absent therefrom without the leave of the Superintendent thereof it shall be lawful for any constable to apprehend such person and convey him back to such Workhouse to be delivered into the custody of such Superintendent.
8. It shall be lawful for any Justice of the Peace on oath made before him that any person committed to any Workhouse has left such Workhouse without the leave of the Superintendent to issue his warrant directing such person to be apprehended and taken back to such Workhouse and delivered into the custody of the Superintendent thereof.
9. It shall be lawful for the Superintendent of any Workhouse to punish any person committed thereto who may leave such Workhouse without permission or disobey any lawful order of such Superintendent or violate or fail to observe any of the regulations of such Workhouse by placing such person in close confinement for any period not exceeding seven days.
10. The Governor with the advice of the Executive Council shall and may appoint some fit and proper persons not less than three nor more than six to be the visitors of each such Workhouse. And some two or more of the respective visitors for each such Workhouse shall visit the Workhouse of which they are visitors at least once in every month and shall inquire into the behaviour condition and circumstances of the persons in such Workhouse in the charge or custody of the Superintendent thereof and shall make such other inquiries respecting such persons as they shall deem requisite for the purpose of ascertaining if it is expedient and proper that any of such persons should be discharged from such Workhouse. And the said Visitors shall report to the Clerk of the Executive Council for the information of the Governor and the said Council the results of all such inquiries.
11. It shall be lawful for the Governor with the advice of the Executive Council to order any person committed to any Workhouse to be discharged therefrom at any time.
12. Every such Workhouse as aforesaid shall be maintained by such funds as may be appropriated by Parliament to such purpose.
13. This Act shall come into operation so soon as the Governor with the advice of the Executive Council shall by proclamation in the *Government Gazette* declared that it shall take effect.
14. This Act may be cited for all purposes as the "Workhouse Act of 1866."

Superintendent of Workhouse to have custody of persons. Constable may apprehend and take back person deserting. Justice may issue warrant to apprehend and take back person deserting. Superintendent may punish person deserting or disobeying. Visitors to be appointed and to report as to expediency of discharging inmates.

Persons may be discharged from Workhouse by Governor and Executive Council. Work-houses maintained by funds provided by Parliament. Commencement of Act. Short title.

## SCHEDULE A.

WHEREAS A. B. has been found by us two [or more as the case may be] of Her Majesty's Justices of the Peace to be a person within the meaning of the Workhouse Act of 1866 and we are satisfied that such person is an irreclaimable drunkard or a person not likely to seek for and obtain employment or to otherwise obtain or provide any lawful means of support. Now we the said Justices do hereby commit the said A. B. to the charge and custody of the Superintendent of the Workhouse at [here name the locality of the Workhouse] there to remain until duly discharged therefrom in accordance with the provisions of the said Act.

Given under our hands and seals at  
day of

A.D.

this

C.D. J.P.  
E.F. J.P.L.S.)  
(L.S.)

## G 2.

[Appended by the Committee.]

ESTIMATES, by Mr. Alfred Davis, of the amount required to provide a pension for all persons of 60 years and upwards, and 65 years and upwards respectively.

Dear Sir,

Registry of Friendly Societies, Sydney, 5th August, 1896.

In accordance with your request, as Chairman of the Select Committee on Old-age Pensions, I have estimated the annual amount which would be required to provide pensions for all persons at and above the age of 60 years and I consider that the approximate amount would be—

For pensions of 10s. per week.			
Males.	Females.	Total.	
£860,600	£598,000	£1,468,600	
And for pensions of 7s. 6d. per week—			
Males.	Females.	Total.	
£645,450	£448,500	£1,093,950	
To provide pensions for all persons at and above the age of 65 years the approximate annual sum would be—			
For pensions of 10s. per week :—			
Males.	Females.	Total.	
£510,700	£357,100	£867,800	
And for pensions of 7s. 6d. per week :—			
Males.	Females.	Total.	
£388,000	£267,800	£655,800	

I have, &c.,  
ALFRED DAVIS,  
Registrar and Actuary.

E. W. O'Sullivan, Esq., M.L.A.

## H 1.

[To evidence of Mr. W. R. Dovey.]

EXTRACT from Mr. J. P. Garvan's speech at the annual meeting of the Citizen's Life Assurance Company (Limited), on 20th February, 1895.

## LIFE ASSURANCE AGAINST INVALIDITY AND OLD AGE.

LIFE ASSURANCE is designed as a bulwark to secure the widow and the orphan against poverty.

And behind this bulwark of Life Assurance, almost everyone having a wife and family can entrench himself, and though the institution of Life Assurance has made great strides during the present generation, much yet remains to be accomplished by its means in warding off poverty. To provide for the declining years of the poor has been and is now a subject of the deepest interest to the philanthropist and statesman.

At the present time in Germany, there is established a system of Old Age State Insurance, but it will take many years to test its effectiveness. But it is evident that no device can ever remove certain phases of poverty from the world.

As long as there is the idleness that will not work, the criminal taint in the blood that shirks the labour that gives the right to eat, so long will there be poverty and acute suffering, not alone amongst those primarily guilty, but amongst all those who by their conditions of life are depending on them for support.

No compulsory assurance will ever be able to extort payment from the criminally idle through a long series of years, so as to warrant paying them a regular annuity on attaining a certain age. And if the annuity be obtainable at an earlier age on the breakdown of health, the State will not have the same protection against fraud that is now possessed by the Friendly Societies.

Into these societies no man is admitted except known to be of good character, and this coupled with the knowledge that members of these societies have of one another, is a great protection against malingering, which nevertheless occasionally takes place.

But

But if the State takes the place of the Friendly Society its design will be on strongly divergent lines, instead of seeking to exclude from the benefits of the State society the improvident and those of doubtful character, the State will compel the inclusion of all those in its insurance scheme.

Malingering will have its widest field for operation and almost certain prizes, but these will be prizes paid to fraud and dishonesty, and the money by which it is paid must be taken from those who strive to give effect to the State design, and will consequently make the benefits the honest obtain from the State assurance more costly than if they banded together, excluding bad and doubtful characters, and giving to their members the full benefits of the payments they had made.

The humanitarian design of a compulsory State assurance or Friendly Society will, in many cases, waste the money of the industrious and the honest in providing bonuses for successful malingering and fraud.

To provide a fund against invalidity and old age, it would be essential to its scientific accuracy and success, that it be made compulsory.

If you have to depend on the option of a large proportion of those in whose special interest the fund is devised, it will prove an absolute failure. The idle, the spendthrift, the dissolute, and the criminal, all will give an undue number to the list of the claimants under an invalidity and old-age assurance law.

But compulsion will only be effected by imposing burthens on the people, and in every country where such a law is imposed it is probable that its burthens will be avoided by the vigorous and the enterprising, who will seek a home where such burthens are not imposed.

The effect of this emigration will be to gradually increase the ratio of the indigent and invalided class, and decrease the ratio of the vigorous workers of a country, and the consequent increased burthens necessary on the proportionately lesser numbers of contributors will eventuate in the direction of undue burthens on the honest workers of a country.

Let me quote the opinion of Mr. T. E. Young, a vice-president of the Institute of Actuaries, in addressing a meeting of the Institute of Actuaries in London in April, 1891, in a paper dealing with the German law of insurance against invalidity and old age. He says :—

"At the risk of being tedious, I would repeat the contention, that the fact of any tyranny and minuteness on Government control dwarfing the individual character, and the freer education of the people by the only sure method of their own toilsome and perplexed experience, marks the fitness, or unfitness, of a scheme for general acceptance.

2. "A Government by such needlessly detailed and elaborate supervision, holding itself implicitly as possessing the sole remedy for all social ills, still more radically tends to demoralise and impede national life by confirming and widening the social habit of applying to the State, at every crisis, real or imagined. External aid is substituted for internal and inspiring effort. To speak in the language of natural history, the homogeneous and gradual evolution of the social organism into higher stages of being, its more intimate adjustment of existence to environment won through painful toil dwindles down into the degradation of parasitism, with atrophy of the activities which triumphantly imply progress, and a concurrent degeneration of the entire national system. For, as in the universal organic system, the decrepitude and paralysis of any section of the corporate body involve progressive decay of the complete fabric of which it constitutes a vital part, especially in respect of the nobler aptitudes. For the parasitic degeneration of the part impoverishes and destroys the vitality of the vigorous sections, until the whole organism wastes away and relinquishes its high functions and destinies in the order of civilisation."

The close supervision almost over every enterprise, and in so many relations of life, which we find in some of the European countries, might enable a Government to provide against many of the defects I have referred to.

Under the conditions of Government in the British Empire, the views I have expressed will closely approximate to the truth.

Let us suppose the consummation of the State design on an improvident and idle person, who has, either by age or malingering, become entitled to the State pension of, say, 10s. per week.

During his earlier years he showed a disinclination to work, but rather a liking for strong drink. Having arrived at 65 years of age, or being invalided at an earlier age, he comes in for his State pension of, say, 10s. per week.

In many cases, as he draws his 10s. per week, he will spend the greater portion in a debauch, and his life, which up to this has been kept somewhat straight by the necessity to work, will, when relieved from the necessity to work, lapse, in many cases, into drinking habits, with its attendant evil examples, and hasten death.

EXTRACT from Mr. J. P. Garvan's Speech at the Annual Meeting of the Citizen's Life Assurance Company (Limited), on 19th February, 1896.

#### OLD-AGE PENSIONS.

The dream of many philanthropic statesmen has been to devise some process of insurance that would save the old and poor from starvation, or the poor-house, in their last declining years. (Hear, hear.)

Germany has sought to carry out such a system, and has had about six years' experience of a compulsory law; and Switzerland, during the past year, legislated in a similar direction, thus showing a strong tendency towards Socialistic legislation in Europe in countries widely differing in their forms of government.

The German law of insurance against old age and invalidity—or as it is commonly known, the compulsory insurance of working-men in Germany—is an attempt on a large scale to solve the most difficult of social economic problems.

Most attempts hitherto have only been temporary and partial expedients that have, as a rule, only given the element of continuity to the difficulties and evils sought to be cured.

One of the greatest difficulties to be coped with is the simulating sickness in order to get sick pay without work, and I will quote you the opinions given by some doctors and others who have been brought intimately in contact with the administration of the new law.

A professor of medicine in the University of Freiburg says :—

"I shall lose all my faith in humanity if I deal much longer with this constant simulation."

The head of the largest of all the local associations in Freiburg writes :—

"We are hopelessly plagued by an amount and variety of feigned weakness and incapacity that I never would have believed possible."

Dr. Bode, of Hermsdorf, near Dresden, writes :—

"In the place where I live the working-men are mostly masons, bricklayers, and the other labourers who work in Dresden while their season lasts, and rest at home in the coldest winter months. Here everybody knows that these good people are strong and healthy as long as they can earn their wages in the town, and that they go to the doctor and complain of pains here and there when they cannot earn more than the sick insurance money will be."

Dr. Thien, Director of the Surgical Institute in Gottbus, says :—

"If the legislators believed they would frighten people from simulation and exaggeration by taking only two-thirds of the previous earnings as a maximum they have deceived themselves."

He adds that, inconceivable as it is, the small amount, coupled with possible idleness, seems to work upon considerable numbers as a sort of evil magic. Upon the general question he says :—

"To a certain extent all the injured tend to exaggeration."

Again,

"Inconceivable as it is, numbers of labourers are blinded by the prospect of lying off, even if they have to live on the smallest pay."

Professor Seeligmüller, who has had an unusually long and wide experience, writes :—

"As most men would like to become rich without trouble, so the injured workman would like to have a life-long pension even when capable of work. He finds that before these laws came into effect the duration of the injuries was distinctly less. He compares his ten years' experience as factory physician with his subsequent experience under the compulsory insurance, and says that the numbers of the incapables steadily increase."

Again,

Again,

"Injuries which before were cured in a few weeks, now often require as many months, (though surgical assistance and appliances are much better, and more quickly applied.)"

"Professor Leichtenstern, of the Citizens' Hospital in Cologne, expresses complete agreement with Seeligmüller. Dr. Vogel, of Eisleben, writes that Professor Seeligmüller has won the thanks of many confreres by speaking out their experience. He thanks him the more, as it requires in the physician some courage. To-day, indeed, that sort of vigorous facing of the question is not at all the fashion."

"In a pamphlet (Leipsic, 1892), upon the accident law by Dr. Ferd. Bohr, leading physician in a medical institute in Carlsruhe, Professor Seeligmüller is opposed upon the question of *traumatische Neurose*, but the author adds, as to the facts of simulation: I will, however, by no means deny the frequency of simulation." He thinks "That the social agitation has done all in its power to embitter the labourer towards this benevolent law." He adds: "It is indeed astounding how a certain class of these people seek to sponge upon the funds under this law."

The sanitary councillor, Dr. Finke, director of a hospital in Halberstadt, writes (1890): "If it goes on in this way with simulation, in twenty years we shall have in the working centres no more able-bodied labourers, but only invalids."

A book just published by Dr. Becker repeats what several physicians have quoted of the malingeringer:—

"He sees less than the blind, hears less than the deaf, limps more than the lame."

"A Government official in Berlin who was maintaining that simulation, though a serious fact, could be overcome, was answered by an experienced physician: 'When you succeed at the green table in changing human nature, you will overcome it, but not before.'"

"Dr. Golcbiewski says that simulation has steadily increased: 'The most skilled and schooled of the simulators indeed are found with the trade associations.'"

Dr. Freund, President of the Berlin Working Men's Insurance Association, has obtained some statistics from the poor-house guardians of 110 communities, viz., 44 cities, 49 towns, and 17 villages; and this friendly critic says:—

"As matter of fact, the charity organisations have been much relieved by the Insurance Fund. The labouring classes are, much less than before, forced to turn to the poor-house guardians for assistance. But there is no saving in money. The certainty of being provided for in illness and old age has materially raised the standard of living, and the guardians of the poor are forced to reckon with this. Hence the money saved by the decrease of the assisted poor has to be expended in raising the allowance of those who still depend upon charity, and, in some communities, the expenditure is greater than formerly."

#### SCOPE OF STATE INTERFERENCE.

Whilst I am in strong sympathy with the humanitarian motives that influenced this kind of legislation, yet I am strongly of opinion that unless most carefully guarded and limited to those elements of the population incapable of combining for their own advancement or protection, it will fail in realising the intentions of its advocates; and not alone will it fail, but it will do evil by seeking to foist on the community the responsibility that belongs to individual effort.

If the community takes the responsibility of providing comfortably for the old age of every poor man, then you take away the selfish motive that is the only spur to so much human effort; and in any country where it is generally adopted, it will destroy the great motive power of progress, retard the growth of civilisation, gradually impoverish the nation, and eventually disrupt society. (Hear, hear.)

It uttering these sentiments I must not be taken as condemning any combination of either the whole people, or any section of the people, for mutual help and progressive action. Far from holding such views, I strongly advocate such combinations, but they must stand mainly by their own efforts; the ability to carry out the design of the combination must exist within the combination itself, and its solvency must be guaranteed more by the business capacity and honest administration of its officers, rather than by Government aid. (Hear, hear.)

It may be that the charitable obligation to provide for the decrepit, the sick, or the demented, which partly rests on the shoulders of every man fortunate enough not to be included in that category, and in a concentrated manner is an obligation resting on the whole community in every civilised country—this charitable obligation may, through the forces which statute law can only create, be able to do something more effectual for realising the humanitarian design of relieving the aged poor than has been accomplished yet; and we will watch with intense interest the experimental legislation of Europe in this respect.

## H 2.

[To evidence of Mr. W. R. Dovey.]

ARTICLE FROM *Bankers' Magazine*, SEPTEMBER, 1894.

THE OFFICIAL REPORT ON FRIENDLY SOCIETIES,

*Old-age Pension Schemes.*

THE *Bankers' Magazine*, during the last year or two, has devoted several articles to the subject of the provision for old age—a topic which continues to occupy the attention of the various Friendly Societies, as also the public. Mr. Brabrook, the Chief Registrar of Friendly Societies, recently issued his report for the year 1893, and the document makes, as was to be expected, interesting reading. Several important societies, or "orders" as they are termed, have measures under consideration for converting their existing plans of sick allowance during the whole of life into plans for sick allowance to a limited age, and a pension after that age has been reached. They are, however, he says, confronted, as hitherto, with the difficulty which arises from the great cost of any adequate provision, but that the current of their opinion remains, as far as he can gather, adverse to the acceptance of any form of State aid. The Chief Registrar points out that it is only to a very small extent that the several proposals for assisted pensions which have been publicly made are provisions for the aged poor. The only persons whom they would affect are those to whom the difference between the full premium they would have to pay to the Government or to a Friendly Society for the pension, and the reduced premium which is made up to an equivalent sum by State aid is sufficient to enable or induce them to buy a pension when they would not otherwise do so. Below this level is the great body of those who are too poor to pay even the reduced premium, or too thriftless to feel the reduction an inducement.

Further, he adds, there is "the great body of those who are in a position not to require a deferred annuity, or who do not care to accept State aid towards the purchase of it. Even the comparatively small portion of the community which lies between these two bodies must be still further diminished by deducting those to whom the offer of State aid is not so much an inducement to save as an incentive to withdraw money already saved from an existing investment of some other kind for the purpose of getting a deferred annuity at a low price at the public expense. To these that offer is distinctly demoralising. The offer of State aid cannot reach the very poor if it implies their voluntarily contributing even the reduced premiums. The proposals which were made some time ago for requiring, even from the very poor, the compulsory purchase of a deferred annuity at full premiums are not now seriously pressed. It is clear that compulsion could not succeed without State aid. It seems equally clear that a system of State-aided annuities could not succeed without compulsion. In either case it would assuredly be hopeless to attempt compulsion on the very poor. Would it be any better if the State aid offered were on a sliding scale: 99 per cent. to the very poor, graduating to 1 per cent. upwards? Such an arrangement would be exceedingly difficult in its application, and most burdensome in its cost; it would probably merge into the adoption of a plan of universal free pensions. If it be inferred from these considerations that the number of those who would avail themselves of State aid would be few, and that, therefore, there would be no great harm in starting the plan as an experiment, it must still be borne in mind that, few or many, it is the present generation, and not the next generation, upon whom the burden of making this provision ought to fall. The absolute and necessary condition of the assurance of a deferred annuity is compound interest. The contribution of the purchaser and the rate in aid furnished by the State must be paid to the day, be never allowed to fall into arrear, and be immediately invested; and the interest realised from the investments must be immediately re-invested, otherwise the contract cannot be fulfilled. A loss of £1 by delay in investment or by injudicious investment, incurred now, will become a loss of £7 or £8 by the time the annuity commences. The primary consideration with the State or any other body which enters into contracts for providing deferred annuities must therefore be the safe and automatic investment of the premiums and interest."

## I.

[To Evidence of Hugh McLachlan, Esq., Secretary to the Railway Commissioners.]

## ESTABLISHMENT OF RAILWAY EMPLOYEES' PROVIDENT AND PENSION FUND.

THE Railway Commissioners had early in view the desirability, in the interests of the staff, of establishing a provident and pension fund for the relief and support in sickness, on retirement, and other contingencies, of persons employed, and a Bill was drawn up and submitted to Parliament, with the object of obtaining authority to bring the fund into existence.

The benefits to be given under the fund, and the nature of the same, are set forth in four schedules, the advantages being dominated by the amount of the weekly contributions. The schedules were as under :—

## FIRST SCHEDULE.

Weekly payment.	Sickness allowance payable in case of disablement by sickness or injuries received whilst not on duty.		Casualty allowance payable in case of temporary disablement from injuries received whilst on duty.		Accident allowance payable in case of accident on duty resulting in death or total permanent disablement.	Death allowances.		Retiring allowance payable on retirement at 65.	Retiring gratuity payable on retirement if contributor is not eligible for a weekly retiring allowance.		
	First 26 weeks.	Second 26 weeks.	First 26 weeks.	Second 26 weeks.		On death of a contributor otherwise than from accident on duty.	On death of a contributor's wife.		Contributions paid for—		
s. d.	Per week. s. d.	Per week. s. d.	Per week. s. d.	Per week. s. d.	£	£	£	Per week. s. d.	10 to 15 years.	15 to 20 years.	Over 20 years.
1 0	25 0	18 0	40 0	30 0	300	50	20	*20 0	£ 20	£ 30	£ 50

## SECOND SCHEDULE.

Weekly payment.	Sickness allowance payable in case of disablement by sickness or injuries received whilst not on duty.		Casualty allowance payable in case of temporary disablement from injuries received whilst on duty.		Accident allowance payable in case of accident on duty resulting in death or total permanent disablement.	Death allowances.		Retiring allowance payable on retirement at 65.	Retiring gratuity payable on retirement if contributor is not eligible for a weekly retiring allowance.		
	First 26 weeks.	Second 26 weeks.	First 26 weeks.	Second 26 weeks.		On death of a contributor otherwise than from accident on duty.	On death of a contributor's wife.		Contributions paid for—		
s. d.	Per week. s. d.	Per week. s. d.	Per week. s. d.	Per week. s. d.	£	£ s.	£	Per week. s. d.	10 to 15 years.	15 to 20 years.	Over 20 years.
0 9	18 6	13 6	30 0	22 6	225	37 10	15	*15 0	£ 15 0	£ 22 10	£ 37 10

\* Increased retiring allowance may be obtained in accordance with section 5 of this Act.

## THIRD SCHEDULE.

Weekly payment.	Sickness allowance payable in case of disablement by sickness or injuries received whilst not on duty.		Casualty allowance payable in case of temporary disablement from injuries received whilst on duty.		Accident allowance payable in case of accident on duty resulting in death or total permanent disablement.	Death allowances.	
	First 26 weeks.	Second 26 weeks.	First 26 weeks.	Second 26 weeks.		On death of a contributor otherwise than from accident on duty.	On death of a contributor's wife.
s. d.	Per week. s. d.	Per week. s. d.	Per week. s. d.	Per week. s. d.	£	£	£
0 9	12 6	10 0	20 0	15 0	200	25	12

## FOURTH SCHEDULE.

Weekly payment.	Sickness allowance payable in case of disablement by sickness or injuries received whilst not on duty.		Casualty allowance payable in case of temporary disablement from injuries received whilst on duty.		Accident allowance payable in case of accident on duty resulting in death or total permanent disablement.	Death allowances.	
	First 26 weeks.	Second 26 weeks.	First 26 weeks.	Second 26 weeks.		On death of a contributor otherwise than from accident on duty.	On death of a contributor's wife.
s. d.	Per week. s. d.	Per week. s. d.	Per week. s. d.	Per week. s. d.	£	£	£
0 6	25 0	18 0	40 0	30 0	300	50	20

1. The membership to be optional, but any railway employee between the ages of 18 and 45 receiving not less than 25s. per week was eligible to become a contributor of the first or second class.

2. Any employee under 18 or between the ages of 18 or 35, receiving less than 25s. per week, was eligible to become a contributor in the 3rd class.

3. Any employee between the ages of 35 and 45 was eligible to become a contributor of the 3rd or 4th class.

1. A contributor of the first or second class could obtain an increased retiring allowance above the amount shown in the schedule by paying an additional contribution to the fund, i.e., if he were not above 25 years of age he would receive an additional retiring allowance of 5s. 9d. weekly for each additional 1d. per week subscribed.

2. If the contributor were above 25 years of age and not 30, the additional retiring allowance to be 2s. 10d. weekly for each additional 1d. contributed.

3. If the contributor were above 30 years of age and not 45 he was to be allowed such additional retiring allowance allowed as the Actuary to the fund should certify as a proper amount for each additional 1d. contributed.

Only persons employed by the Commissioners were to become contributors to the fund, but temporary employees might, with the permission of the Commissioners, contribute and become during the period of their employment entitled to the casualty and accident allowances, as set forth in the fourth schedule. The contribution payable being 4d. weekly.

The

The Government Railway Act of 1838 provides that any person being permanently employed in the Railway Service after the passing of such Railway Act shall insure his life, but the Provident Fund Bill provides that any person becoming a contributor to that fund shall be deemed to have complied with the provision of the Railway Act as regards life insurance, and no further action need be taken with regard to life insurance.

A contributor was not allowed to join the fund in more than one class, but a contributor might be allowed to transfer from a lower to a higher class of benefits if eligible. The person transferring paying such a sum as the Actuary to the fund should determine to be due to the fund under the circumstances of the transfer.

Any railway employee being a contributor to the Civil Service Superannuation Account might elect to retire from that fund and to join the Railway Employees' Provident and Pension Fund, all privileges due to him on his retirement from the Civil Service Fund being conserved to the date of transfer.

Contributors to the fund ceasing to be in the employ of the Commissioners otherwise than by dismissal, might be allowed to continue to contribute and enjoy the advantages of the fund other than with regard to retiring allowances, the contribution payable for such advantages being fixed by the Actuary of the fund.

1. Any person ceasing to be employed and to contribute to the fund should have claim to the benefits of the fund as might be determined.
2. Any person in receipt of a retiring allowance should be considered to be a contributor so far as the payment of the death allowance in case of his wife's death is concerned.
3. Any person whose services were dispensed with through retrenchment, and had no wish to continue a contributor, might be allowed a sum equal to half the retiring gratuity provided after ten years' contribution; but any contributor dismissed from the service should forfeit all claims to the benefits of the fund.
4. The sickness allowance to be payable for a maximum period of fifty-two weeks, consecutive or otherwise, during any period of eighteen months; but any additional cases of continued sickness where the allowance has been exhausted, the Committee might grant a further sum not exceeding £10.

Any allowance payable under the provisions of the fund will be incapable of being assigned or in any way anticipated. The amount of any contributors' payment to the fund might be deducted by the Commissioners from the employee's wages when due.

The Commissioners shall contribute to the fund an annual sum equal to 75 per cent. of the contributions of the employees, or such less amount as the Actuary shall certify to be sufficient to secure the stability of the fund.

The management of the fund was to be vested in a Committee of not less than nine members, two-thirds to be nominated by the delegates and one-third by the Commissioners.

The delegates to represent the contributors and to be elected from each district according to the locality in which they are for the time being employed, the number of delegates for each district to be subsequently arranged by regulation.

The Chairman of the Committee to be one of the members appointed by the Commissioners.

The Secretary and Actuary to be appointed and paid by the Commissioners.

In case the fund should be deemed by the Committee to be insufficient to meet its liabilities a levy, not to exceed two additional weekly contributions during each period of three months, might be made by the Committee.

## J.

[Appended by the Committee.]

### CHARITABLE INSTITUTIONS OF NEW SOUTH WALES.

Offices of the State Children Relief Board, the Director of Government Asylums, and Children's Protection Act,  
Richmond-terrace, Domain, Sydney, 13 August, 1896.

Sir,

In accordance with your request, I have gone as carefully as possible into the matter of the probable number of deserving poor over 60 years of age in this Colony (outside the Government Asylums) likely to be brought under the operation of a pension policy for that class only. The numbers, of course, cannot be obtained with strict accuracy without waiting a considerable time for special inquiries to be made in every district throughout this Colony, but I believe the figures I now present to you are approximately correct. I do not think they would exceed 1,300. Of course, the number would probably increase in proportion to the increase of the general population, but then the consolidated revenue would be progressive also. If the 10s. a week allowance were adopted, it would at the present time cost £33,800 a year to maintain these 1,300 persons.

Dr. Beattie called upon me to-day, and in the course of conversation gave me an idea of the statistical portion of his evidence before your Committee. He stated that he had fixed the probable number of inmates of the Government Asylums who could be pensioned at about a 10 per cent. proportion to the whole. So far as his institution is concerned, he is probably correct, as he has charge of all the consumptive cases, cancer patients, and indeed a very bad class of hospital patients generally. But he agrees with me that when dealing with the number under control in all the institutions my approximation of 15 per cent. is more likely to be correct. Upon looking at my evidence, I find that I stated there were 3,600 inmates, and that from 500 to 600 might possibly be entrusted with pensions. If the proportion is fixed at 15 per cent., it gives the number who could be pensioned at 540 persons.

There is one other point of importance to which I would ask permission to direct your attention, although I have no doubt it has presented itself to your minds already. In connection with the evidence taken in England upon this important question of old-age pensions, nearly all the objective testimony came from officials directly connected with the management of institutions. I have not had an opportunity of knowing if that has been the case with regard to the evidence given before your Committee, and I do not, of course, imply that such evidence is not perfectly conscientious—indeed, I am sure it is. But may I take the liberty of saying that it is only natural for witnesses of this class, particularly if they are enthusiastic workers, to be unconsciously so much attached to the systems they administer, as to believe honestly that any experiments in other directions must necessarily fail. I know that this was the case in connection with the initiation and working out of the boarding-out system in this Colony.

I have, &c.,

SYDNEY MAXTED,  
Director of Charitable Institutions.

## K I.

[To Evidence of W. F. Schey, Esq., M.P.]

### PENSIONS FOR OLD AGE AND PROVIDENT INSURANCE FOR WORKING MEN.

(By W. A. HUNTER, M.P., House of Commons.)

#### SOCIAL QUESTIONS TO THE FRONT.

WHEN the historian of the future comes to estimate the effect of the two greatest political measures of the second half of the nineteenth century—the enfranchisement of the working man in towns by the Reform Act of 1867, and the subsequent enfranchisement of the agricultural labourer by the Act of 1885—he will probably signalise as their most remarkable consequences a change in the character of the political questions upon which parties are formed.

That change is often expressed as the substitution of social for political questions. The phrase is somewhat inaccurate, but it expresses a substantial truth. From the Revolution of 1688 the conflicts of political parties in this country raged chiefly round the topic of civil and religious liberty, and, after the French Revolution, the struggle of the middle and working classes to obtain a share of political power. Between 1688 and 1832, we were governed by an aristocratic oligarchy. In 1832, the great landlords were obliged to admit the manufacturers and the shopkeepers to a partnership in the Government of the country; and, now since 1867 and 1885, the constitution of the country has become genuinely, although imperfectly, democratic. We have now got government of the people by the people, and if it is not also government for the people, they must blame themselves. They have the power, and if they do not use it or use it unwisely, the fault, as well as the suffering that may follow, will be all their own. The great constitutional struggle which began with the beheading of Charles I, and continued for two centuries and a half—a struggle, the main object of which was to determine who should be masters—has come to an end. The constitutional epoch is closed, civil and religious liberty is practically secured, the democracy is on the throne. A new era has opened.

The shifting of the centre of political gravity from the middle class—which for half a century had the control of the Government—to the working class must necessarily change the whole current of political ideas. Although many of the persons who belong to the middle class live from hand to mouth, and are dependent for their daily bread upon more or less precarious employment, yet the tone and political temper of this class are dominated by the owners of property. In future, although the influence of property will for many a day be enormous, it will be only one factor, and not the greatest, in our social and political evolution. Year by year, as working men come more and more to realise the nature of the weapon that the constitution has placed in their hands, the tone and temper of the political world will be more and more coloured by the views of labour, and less and less by the sentiments generated by the possession of property.

#### EFFECT OF SECURITY UPON OPINION.

The great charm of property is that it ensures for its possessor independence and security. A man who has enough to live upon need not fear the frown of a master, and he can face the casualties of life with a calm mind. Sickness does not deprive him of his means of support; infirmity and old age have no terrors for him; he does not tremble lest the fluctuations of trade should deprive him and his family of food. This sense of security cannot fail to colour his political opinions; he inclines to a cheery or cynical optimism; "everything is for the best in the best of all possible worlds"; he acquiesces readily in the fatalistic doctrine—which, by the way, although it borrows its phraseology from the words, contains nothing of the spirit of Jesus Christ—that the poor shall always be with us. This intellectual temper is strikingly exhibited in Lord Beaconsfield's earlier novels. It has little faith, and if the truth be told, not much desire; it accepts with complacency the lot of the hewers of wood and drawers of water; it meets all suggestions for change with a languid scepticism such as is strikingly shown in the speeches of Mr. A. J. Balfour, or with the brutal cynicisms such as we find among Tories of the baser sort.

#### INSECURITY OF THE WORKMAN.

Political power has passed into the hands of a class whose dominant feeling is insecurity. A workman suffers from uncertainty of employment. He is liable—in some trades peculiarly liable—to sickness and injury; has to look forward to an old age of dependence upon his children, or upon the tender mercies (which are cruel) of the poor law. If he dies in early manhood his last hours are embittered by the thought that he leaves his widow and children totally unprovided with means to face the struggle for existence. He looks upon the cheerful optimism of the rich as a bitter jest indeed. He does not find that everything is for the best in the best of all possible worlds. When his children cry for food, and he has little or none to give them, and when at the same time he sees a small minority indulging in riotous waste, he is very apt to lend a ready ear to any quack who will promise him the millenium. An angry man is seldom a wise one, and although the working man is the first to suffer, and to suffer most severely, from mistaken remedies for social maladies, if his mind is once inflamed with a passionate feeling of social injustice he is capable of grave errors. It is not too much to say that it depends largely upon the extent that we can remove the "insecurity" of the workman's position as to the temper in which we shall approach the solution of the great social problem that lies before us. If means can be devised to give to workmen that happy sense of security which is now the peculiar possession of owners of property, we may confidently expect that the progress of the country will in the future, as in the past, be steady, uniform, practical, and sound; but if nothing is done in this direction, and we come upon times of very bad trade, a very dangerous temper may be developed. The giant Sampson may pull down the edifice, although he buries himself in its ruins.

The amount of public interest that has been excited during the last eighteen months in the question of pensions for workmen in their old age has drawn off attention from the larger topic of provident insurance for the other casualties to which workmen are liable. Old age is only one of the risks to which the working class is exposed, and although it may be found best to begin with that topic, we must never forget that it is only part of a much wider subject. The evils to which workmen are exposed may be summed up in the following points:—

1. Irregularity of employment.
2. Sickness.
3. Disablement, arising from (1) injuries sustained in the course of employment; and (2) other causes.
4. Infirmity, arising from old age.
5. Death, leaving young children unprovided for.

Irregularity of employment is a great evil, but by common consent it is not one which Parliament can directly attack. It may be worthy of consideration whether the State and Municipal authorities who largely employ labour might not do something to mitigate the hardships arising from fluctuations of trade. Why should they not, as a matter of general policy, take up the execution of great public works in times when trade is slack? Would it not be possible, for example, to build ships for the Navy when the ship-building yards are empty? It would not, of course, be possible to avert trade crises, or to give employment to all who from any cause are thrown out of work, but something might be done, and "every little helps."

#### INSURANCE WILL GIVE SECURITY, BUT THE OTHER CAUSES STAND UPON AN ENTIRELY DIFFERENT FOOTING.

There is no impossibility in making State provision against sickness, early death, infirmity, and old age. The question is, how far is it practical or expedient to add to the functions of the State some provision for these casualties of a working man's life. A very slight consideration will show that the protection of the workman cannot be accomplished otherwise than by an application of the principle of insurance. The only alternative to insurance is that each workman should accumulate a fund sufficient to carry him over a period of sickness, sufficient to bring up his family if he dies, sufficient to maintain him for life if he is disabled, or in old age. Even the best-paid workman would find it impossible to collect so much money before his marriage, and as regards the overwhelming majority of workmen, the idea is out of the question. The burden is too great for the individual. But it is a very light burden if distributed over the whole body. Only a few are sick, only a few are maimed or killed, only a minority reach old age. The cost of making provision for these cases is too heavy to be borne by those who have the misfortune to suffer, but it may be met by a small levy on those "who are whole and have no need of a physician." The best trades unions have applied this principle with much advantage to themselves for members temporarily out of employment, and both trades unions and friendly societies have familiarised the working class with the principle of insurance for sickness. Nevertheless, it would be rash to affirm that the nature of insurance is thoroughly understood. Nothing is more common than the objection that if a workman pays into an insurance fund and dies before reaching the pension age he loses his money. It might just as well be said that a man who insures against fire loses his money if his house is not burnt down. Or it might be urged that a healthy man who escapes sickness has done a foolish thing by subscribing to a benefit fund. On the contrary, he gets full value for his money—he obtains security. A man joins a friendly society to protect himself against the risk of illness, and he has more sense than to complain against the enjoyment of robust health.

#### THE "BUSINESS" OF THE STATE.

A word may be said upon an objection not shared by working men, but emanating from some worthy and respectable persons. The State, we are told, has no business to intrude into the domain of insurance. Its proper functions are purely negative; its sole duty is to keep the peace and repress violence. This narrow theory of the functions of the State has so little hold of working men that but for the respect due to many of its advocates one might leave the subject unnoticed. That theory is clearly stated by Bastiat:—"When law and force keep man within the bounds of justice, they impose nothing on him but a mere negation. They only oblige him to abstain from doing harm. They violate neither his personality, his liberty, nor his property. They only guard the personality, the liberty, the property of others."

This passage is a good illustration of the fallacious *a priori* and unhistorical method. If we examine the early stages of human society, we shall find that the roll of the State was even more humble and narrow than Bastiat desires. The earliest human societies were content to protect themselves from external enemies. Their function is still represented in our departments of the Army and Navy. Inside the society there was little that could be called government and nothing that in the proper sense of the term could be described as law. At this stage of human development, Bastiat's theory would have been considered much too broad and advanced. Primitive man, if he had been a speculative philosopher like Bastiat, would have said it was no business of the State to interfere with the domestic affairs of the tribe, it did enough if it prevented its neighbours from eating him. But mankind did not rest in that primitive condition, it moved on.

The second step in social development corresponds with great exactness to Bastiat's theory. To preserve life and limb and property was the first effort of law. The graver injuries to person and property were dealt with by actions at law,

law, but at this stage the law was not so bold as to enforce contracts. That was an interference with the human liberty that the sturdy Bastians of primitive society would have regarded as quite intolerable. Indeed, nothing is more instructive in the history of legal ideas than the timid and gingerly fashion in which law began to take contracts under its jurisdiction. According to the strict letter of Bastiat's doctrine the State ought to confine itself to enforcing negative duties the sphere of positive duty if outside its province. The spirit of Bastiat was strong in the rudest societies. Indeed, to think that law first took a grip of contracts under the impulse of a superstitious religion. At first it interfered only with contracts to which a god was a party, which were made by solemn religious rights, and its object was not to add security to promises but to avert from the community the mischiefs that an offended Deity was believed capable of inflicting.

The negative theory of the functions of the State would either exclude contracts or admit a great deal that the school of Bastiat would keep out. If it is adopted, then we must conclude that the post office and the mint should be left to private firms like W. H. Smith & Co., or Fruhling and Goschen. It is a theory that has no place save in the infancy of human society. That organisation of man that we call the State, although it owed its origin to the necessity of protecting communities from external foes, has never, except at its earlier stages, been confined to pure negation. For what purpose the State may beneficially be employed is a question that can only be determined by experiment and experience, nor is it at all necessary that the functions of the State should in all places, and in all circumstances, be the same. The constitution of the Government, the nature of the work, the nature of the people, these and many other points have to be considered when we have to decide whether, in a particular case, it is expedient or not that the Government should act. In one country a particular act of interference may be wise and beneficial, in another it may be foolish and mistaken. Perhaps there is no political doctrine which among civilised nations would obtain a more general assent than the non-interference of the State with the religious opinions or worship of its people. Three hundred years ago a contrary opinion universally prevailed in the most advanced countries. In this direction, as also in many others, the sphere of the State has contracted, but on the other hand extensions have been made. Our ancestors paid great attention to souls, we look after the drains. What the State may wisely undertake, what it may more wisely let alone, cannot be settled by any hard and fast abstract high *a priori* rule. It can only be approximately determined from time to time, according to circumstances, in the light of reason and experience.

#### OUTLINE OF THE SUBJECT.

In order to give security to the classes that live by labour, it is essential to provide not merely for the case of sickness, but also for infirmity and old age, and for fatherless children. The problem to be solved is whether, and in what ways, our Government here in Great Britain may usefully assist in protecting working men from those casualties that cast so dark a shadow over their lives. I propose in the first instance to examine what has been done in foreign countries to see what guidance may be derived from their experience. I shall then consider various plans for voluntary or compulsory insurance, and finally will call attention to the peculiarly favourable opportunity arising out of financial relations of Scotland to the empire for making a commencement in Scotland of a national scheme of insurance against the ills that flesh is heir to.

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#### CANON BLACKLEY'S CONDEMNED SCHEME.

In 1885 the House of Commons appointed a Select Committee "to inquire into the best system of National Provident Assurance." The Committee was reappointed in 1886 and 1887, two general elections took place between the first and final reports, and the composition of the Committee was considerably changed. Several schemes were brought under the notice of the Committee, but practically the inquiry resolved itself into an examination of a scheme propounded by the Rev. W. L. Blackley, hon. Canon of Winchester. The final paragraph of the report may be quoted:—

"Your Committee, although unable to recommend the adoption of Canon Blackley's scheme, feel that they cannot conclude their report without recording their sense of the disinterested patience and energy with which he has endeavoured to remove the causes which tend to drive the poor into the workhouse. He has brought to light an immense deal of information on a subject which lies at the root of the happiness and welfare of large masses of the population—information which cannot fail to prove useful in any future legislation which may be undertaken; and his proposals, though in the opinion of your Committee they appear objectionable in some respects and impracticable in others, contain more valuable suggestions, and seem to be based on more extended knowledge, than any of the other schemes which have been brought under their attention."

This well-merited tribute to a clergyman, whose zeal for the poor reflects honor on his profession, very properly accompanies a decision which was adverse to the scheme he then advocated. Canon Blackley's condemned scheme sought to accomplish a very important object. If successful, it would have dried up the fountains of more than one-half of our pauperism, and would have proved an enormous blessing, especially to the poorest class of labourers. It is, therefore, instructive, with a view of future legislation, to ascertain precisely which of his recommendations were condemned as impracticable. Speaking generally, Canon Blackley's scheme was disapproved in respect of those points in which it differed from the German model. The scheme advocated by that reverend gentleman—

#### *Combined Sickness and Old Age Insurance.*

The following were the main points:—

1. It did not apply to those who were over the age of 21 when the system came into operation. All above that age were left to be provided for by existing agencies.
2. It compelled every person, rich or poor, of high or low degree, to pay between the ages of 18 and 21 a sum of £10 into a national sickness and pension fund.
3. In the case of those who, between 18 and 21, were employed for wages, the employer was to be responsible for the collection of the amount, which he was authorised to deduct from the wages.
4. Every person so insured was to be entitled to 8s. a week of sick pay when they suffered "loss of wages through sickness," and a pension of 4s. a week in any case on attaining the age of 70.
5. The sick-pay would continue however long the duration of the illness, and thus, in effect, was a provision for disablement as well as old age.
6. The premiums were to be paid to the post office, and handed over to the elected trustees of the national sickness and pension fund.
7. The sick-pay and pensions were to be paid through the machinery of the post office, under the supervision of local elective committees.
8. This compulsory insurance was to apply to women equally with men.
9. The State was to give no subvention in aid of the fund and no guarantee of its solvency. Its sole duty was to compel persons between the age of 18 and 21 to pay the sum of £10.

In recording the adverse opinion of the Committee as respects the sickness part of the scheme, it is well to note that the Committee expressed a more favourable view of the provision for old age; but they were "disposed to wait for the further development of public opinion before advising the adoption of a general obligatory system of superannuated pay." This reservation ought not to be forgotten.

The leading ideas of Canon Blackley's scheme, in so far as it relates to the case of sickness, are three in number:—(1) The repayment of the premiums, either in one sum or in instalments, before the age of 21; (2) the universality of the obligation imposed alike upon peer and peasant; and (3) the establishment of a single national fund for the United Kingdom, including England, Scotland, and Ireland, through the machinery of the post office. In all those particulars it is the exact opposite of the German system, with which, however, it agrees in requiring no State guarantee or subvention. Oddly enough, the Committee agree with the Canon on the question of prepayment. They observe that in Germany, "Payments to the fund are not made in an initial lump-sum, but by weekly and life-long deductions from wages. In this respect your Committee think that the German system shows an inferiority to Canon Blackley's proposal, inasmuch as prepayment enables a much smaller total payment to suffice as insurance, and once got over, the workman is left free to dispose of his savings in whatever prudent investment he may select." This finding applies with much greater force to the old-age pensions, and is somewhat neutralised by the recognition of the Committee, that the administrative difficulties of collecting the money render the scheme impracticable. It is, of course, most desirable that young people before they marry should lay aside a sum adequate to insure them against sickness, disablement, and old age, but the practical difficulties in the way proved fatal in the judgment of the Committee to the whole scheme.

A more serious question arose as to whether £10 was sufficient. Mr. Sutton, the Government Actuary, expressed an opinion that, assuming 3 per cent. to be the rate of investment, £18 would be nearer the mark. Canon Blackley, with great ability, and upon a wise basis of information, disputed this opinion. The fact is, however, that there do not exist any data upon which an actuary could pronounce a confident opinion, either for or against the figures adopted by Canon Blackley, viz., £10. Sick-pay is an elastic quantity, depending very much on the stringency and closeness of the supervision. The Committee arrived at a clear opinion that, in view of the magnitude of the scheme, they could not accept the initial payment of £10 as a satisfactory basis. They, however, pointed out that "the financial objections to be urged against Canon Blackley's proposal for national insurance do not press with such force against the deferred-annuity part as against the sick-pay part of his scheme."

The German scheme is inferior to Canon Blackley's in theoretical perfection, but it has the great disadvantage of being practical. The German Government does not compel any workman to insure against sickness, if his wages exceed the average by 60 per cent., nor does it attempt compulsion, except for those in permanent employment, and it holds the employer responsible for the payment. Canon Blackley would bring in even the gentry, and the military, as well as casual labourers and loafers; and if it could be done, it would doubtless have strengthened the financial part of his scheme, as no one would give sick-pay unless indigent, or as compensation for loss of wages. Theoretically, it is right to make the obligation universal, and the aid that the rich would thereby give the poor is not more than a fair equivalent for the relief that property would obtain through the diminution of the poor rate. But, with all his ingenuity, Canon Blackley was not able to remove the doubts entertained by the Committee as to the feasibility of this part of his scheme. A plan that secures 13,000,000 of the German people against sickness compares well with our voluntary system, which does not reach more than 3,000,000 or 4,000,000.

But it is upon the actuarial question that the superiority of the German plan is most conspicuous. The German law specifies the minimum help that is to be given to a sick workman; it does not fix the premium, but leaves it to be determined by practical experience in the form of a percentage of the wages earned. A very few years' experience will enable the factory and local clubs in Germany to fix with great accuracy the amount of contributions required. It is true that in the course of his life a German workman will pay a much larger sum, on the average, than he would by the prepayment of a lump sum in early manhood. But the burden is spread over so long a period that it is not felt as a burden at all. He receives a few pence less each week than his full wages, but as he never handles the money he never misses it. The committee of 1837 rightly say "that many of the poorest classes would be unable to provide £10 between the ages of 18 and 21 without great difficulty." There can be no question that a scheme which requires either very heavy contributions or the payment of a lump sum down would be less agreeable to the bulk of the working-men than one which, although it would involve a higher aggregate payment, would be so spread out as to be scarcely felt.

A very important and interesting feature of the German system is that it discards the element of age in fixing the insurance for sickness. No voluntary society could do this. Our Friendly Societies generally refuse to admit members over the age of 45, and they quote much lower rates to those who join at an earlier period of life. In a voluntary system this is right and unavoidable, but it has its disadvantages. The conflict of interest between the young and the old members of a Friendly Society is not an infrequent cause of collapse, and sometimes the older members find themselves left without protection at the very period of life when it is most required. But when insurance is made compulsory, there is no difficulty in averaging the rate of sickness and requiring the same contributions from the young as from the old. If the young pay a little too much, the burden falls upon them when they are strong, and they get the benefit of their sacrifice when they themselves advance in years.

From an actuarial point of view, the German system possesses one distinct advantage. The sick clubs are trade clubs, containing workmen of all ages, from the young beginner of 16 to the old man of 70, who is on the point of taking his pension. Hence, after a few years, they will be able to ascertain with the greatest exactness the cost of sickness, and so be able to adjust their premiums on a basis of perfect safety. But a voluntary Friendly Society which starts with young and vigorous subscribers does not come to feel the real pinch until these members become old and the temptation is almost irresistible to adopt rates of contribution that are insufficient, and ultimately run the society. The affiliated orders have made great and successful efforts to overcome this difficulty, but it is a melancholy and undoubted fact that a very large proportion of the societies to which the working man is compelled to resort are actuarially unsound and therefore unsafe. Canon Blackley may put it too high when he includes five-sixths of the sick societies in this unhappy category: But Sir George Young, who may be regarded as an expert, and who is a strong advocate of the voluntary system, says: "It must be confessed that perhaps the great majority of Friendly Societies are unsound."

From this serious evil the compulsory system in Germany is free, or, at all events, is in a sure way of becoming free. Canon Blackley's scheme establishing, as it would have done, a single National Assurance Society was open to the objection which does not apply to the small and local clubs created under the German insurance law that "there would be great difficulty in preventing malingering." The Committee were of opinion that "this objection seriously affects all the part of the scheme which refers to the payment of benefit in sickness." In spite of what Canon Blackley said that everybody would be interested in the fund, and therefore ready to assist in detecting impostures, it is impossible not to agree with the Committee in their view that this interest is too remote to prove an effective check. The German system, on the other hand by confining the clubs to single factories or to groups of men engaged in the same place in the same trade goes a long way towards securing the advantage of our system of local Friendly Societies, and is wholly free from the objection brought against Canon Blackley's too ambitious proposals.

Considerable opposition to Canon Blackley's scheme was offered on the part of the great affiliated orders of the friendly societies. But the Committee were less impressed by this opposition than by the actuarial and administrative difficulties of the scheme itself. Some of the witnesses seem to think that the people were made for Friendly Societies, not Friendly Societies for the people. Indeed, Mr. Reuben Watson, actuary to the Manchester Unity Oddfellows, did not hesitate to say, in reply to Q. 909 (1855), "If you could devise some scheme which would be for the welfare of all classes of this country but which would be to the detriment of Friendly Societies, you would not object to it on that ground?" A. "Well, I think I should object to it. I think that Friendly Societies have voluntarily done a very great deal of good in this country, and I think they ought not to be interfered with by the establishment of any system which would be injurious to them." This sentiment so naively expressed, "Perish the poor, but save the Friendly Society," did not find much sympathy in the Committee. They reported that, "No conclusive evidence was given to show that the establishment of a compulsory society on a national basis could endanger the funds or affect the soundness of any existing voluntary society conducted on a sound principle." They add that, "It is evident to your Committee, in spite of their acknowledgement of the increasing good work done by well-managed Friendly Societies and of all the recently provided national aids to thrift, that their tendency is, while aiding the thrift of the thrifty, in no way to discourage or put an end to the waste of the improvident." It is worthy of notice that, to a large extent, one of the chief of the incidental advantages of the system of Friendly Societies is secured under the German law. The management of the sick clubs is largely in the hands of the men themselves. In the local clubs one-third only of the Committee consists of representatives of the employers, the remaining two-thirds being delegates of the workmen.

THE topics hitherto discussed—sickness and accident—cover a large portion of the casualties against which workmen are bound to make provision. There remain to be considered death and permanent disablement not arising from injuries received in the course of employment and old age. A full account of what has been done in this country to meet these contingencies would involve much research, and would testify to the seriousness of the efforts of our workmen to "put by something for a rainy day." But it is admitted on all hands that the contingency for which least provision is made is that which in a healthy society may be expected to occur with more and more frequency—the arrival of old age. This is the topic that of all others, and perhaps for that very reason excites the greatest interest in the public mind. Many schemes have been proposed and are being discussed. The subject is full of difficulties, and it would seem desirable to reverse the process which I have hitherto pursued, and, instead of beginning with England, to make a start from the experience of foreign countries. By far and away the most instructive experiment is that to be found in the German Empire. At the present time the French Parliament has a vast scheme of State-aided provision for old age under consideration. Denmark may supply us with some useful hints, and interesting voluntary schemes have been attempted in Italy and Holland. I shall begin, therefore, with a concise statement of the efforts made by our continental neighbours to secure provision for old age.

GERMANY.

In preceding articles I have shown in brief outline the character of the system by which practically every workman in regular employment is insured against sickness and against death or disablement resulting from injuries sustained in the course of his employment. It is believed that 13,000,000 of Germans are thus secured, whereas the number so insured in this country is estimated by the Registrar-General of Friendly Societies to be only between 3,000,000 and 4,000,000. In accomplishing this great work the German Government has not assumed the functions of an insurance society, nor has it granted any subvention to the associations which it has called into existence. It has done the work by imposing a legal obligation on employers, and by assisting in the formation of societies by which the object can be secured. The German Government has not up to this point travelled beyond the limits which are all but universally recognised as the legitimate province of Government. But in dealing with old age it made a new departure. It recognised the necessity of a State subvention, and, as a consequence, a large extension of the area of State intervention in the business of insurance. The law of June 22, 1889, made insurance against disablement and old age compulsory upon the working classes.

It may be convenient, before proceeding to describe the details of this vast and memorable law, to show in a tabular form the nature of the provision made by the German law against the several casualties of life.

I. *Sickness*.—Compulsory insurance in sick benefit societies under local management.

II. *Death*—

- (a) Arising from injuries to workmen. Annuities to widows and orphans under the compulsory Accident Insurance Law.
- (b) Arising otherwise than from injuries in employment.

This case is very partially provided for by the return to the widow and children of a proportion of insurance money paid to the Old-age and Disablement Fund; but may be said practically to be uncovered by the German law.

III.—*Disablement*—

- (a) Arising from injuries in the course of employment. Annuities are provided under the compulsory Accident Insurance Law.
- (b) Arising otherwise. Provided for by the law of June 22, 1889.

IV. Old age also is covered by the same law.

Thus, looking upon German legislation as a whole, it secures practically to the vast majority of the working class no inadequate provision against all the possible contingencies in a workman's life, with the exception, and no unimportant exception, that it does not cover the case of a man dying from ordinary disease and leaving a widow and children.

A word may be said upon this exception—"the missing link" in the German law. It is very difficult to obtain statistics to show the number of children of different ages that are left orphans by the death of the father. I have, however, seen, through the kindness of Mr. King, actuary of the Atlas Insurance Company, a return from the Government of New Zealand for the year 1890, which supplies valuable details. The table covers only a single year, and it is much too narrow a basis upon which to found calculations for a European country; but nevertheless I give the figures for what they are worth. It appears that out of a total of 1,573 males who died in New Zealand in the year 1890, 699 left children, 832 males and 793 females, under the age of 15 years. If we consider 3s. per child per week a reasonable allowance until it attains the age of 15, it would require all the males who died between the ages of 60 and 65 to be insured for a sum of nearly £50 at their death. If only all the married males were insured, it would be necessary on their death that they should be insured for nearly £90, in order to make a provision for all the orphans of 3s. a week until they reached the age of 15. It may be taken that only a very small proportion of the deaths that occur among males between the ages of 20 and 65 are due to accidents in their employments; so that in Germany a large and important field is still unoccupied by insurance provisions.

*Insurance against Disablement.*

Much of the adverse criticism that has been directed against the German scheme of insurance for old age arises from a mistaken notion of the scope of the law. Old age is entirely a secondary and subsidiary object; the chief object of the law is to extend and complete the insurance for sickness. The ordinary Sick Benefit Societies *must* give sick pay for thirteen weeks, and *may* allow sick pay for a year. But at that point the sick allowance must terminate. The workman who from prolonged illness is dropped by the Sick Benefit Societies is taken up by the Disablement and Old-age Fund. This fund is intended to provide an adequate allowance for a disabled workman, but it was never expected to give a sufficient pension for old age. The pension for old age does not begin until the age of 70 years is completed, and it varies in amount according to the scale of contribution, from £5 6s. 5d. (or 2s. 3d. per week) to £9 11s. (or 3s. 8d. per week). These sums, although they are more than one-third of the average wages of the class, were never supposed by themselves to be a sufficient allowance upon which a workman could live; they are meant to be an aid to other resources.

The true relation of old age and disablement in the latest German law may be gathered from the fact that while it is calculated that there will fall on the fund 120,000 disablement pensions in each year, the number of old-age pensions expected to become due in the same period is only 36,000. But not only is the number of disablement pensions more than three times as great, but the allowances for disablement are on a much more liberal scale, and if a man is drawing a disablement pension when he reaches his seventy-first year, he continues to enjoy it, and is not put down to the lower scale of old-age pensions. Thus the old-age pension is payable only in the case of non-disabled men, and is due although the workman is strong enough to do his customary work.

A full right to the disablement pension arises after five years' contribution. The amount varies (1) according to the scale of the workman's contributions, which, again, vary according to his wages, and (2) according to the number of years in which he has contributed. For the purpose of insurance the workmen are divided into four classes:—

- Class I.—Those who earn up to £17 10s. (350 marks) a year.
- Class II.—Those who earn from £17 10s. to £27 10s. (550 marks).
- Class III.—Those who earn from £27 10s. to £42 10s. (850 marks).
- Class IV.—Those who earn above £47 10s. a year.

In calculating the pension for disablement each workman receives 60s. a year from the insurance office, and 50s. a year from the Government, or in all £5 10s. To this is added for every week during which he has been a contributor a sum varying according to his class, as follows:—

Class I.....	¾d. per week (2 pfennigs).
Class II.....	¾d. „ 6 „
Class III.....	1d. „ 9 „
Class IV.....	1¼d. „ 11 „

The contributions of the workman are non-returnable, except as to one-half if he has paid for five years without receiving any allowance, and dies leaving a widow or children under 15 years of age. So if a woman has contributed for five years and dies before receiving an allowance her children under 15 years of age, if they are also fatherless, receive back one-half of her contributions. Suppose we take the case of two workmen, each of whom after ten years' full contributions (470 weeks) becomes disabled, one belonging to Class I, and the other to Class IV, the first will receive an annuity, if permanently and totally disabled, of £5 10s., plus twice 470 pfennigs, or in all £5 19s. 4¾d. The second will receive £5 10s., plus thirteen times 470 pfennigs, or £8 11s. 1¼d.

The following table shows the scale of pensions for total and permanent disablement for the periods of contribution specified, arranged according to classes :—

Number of years' contributions of forty-seven weeks each.	Amount of annual Pension.			
	Class I.	Class II.	Class III.	Class IV.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
5 .....	5 14 8½	6 4 1½	6 11 1¼	7 0 3
10 .....	5 19 4½	6 18 2½	7 12 3½	8 11 1¼
20 .....	6 8 9½	8 6 4¾	9 14 7½	11 12 2½
30 .....	6 18 2½	9 14 7½	11 16 10¾	14 13 3½
40 .....	7 7 7½	11 2 9½	13 9 2½	17 14 4¾
50 .....	7 17 0	12 11 0	16 1 6	20 15 6
Average earnings of each class .....	15 0 0	25 0 0	36 0 0	48 0 0
Annual contributions for old age and disablement by workmen.	0 3 3½	0 4 8½	0 5 7½	0 7 0½

The scale of pensions, it will be seen, varies from one-seventh to over a half of the wages earned when in full and continuous employment. On the whole the pensions are small, but so are the contributions, which vary from three farthings to three halfpence per week.

#### The amount of Old-age Pensions.

The pension for old age is calculated in a different fashion. To each pension the State contributes 50s. a year. To this the insurance societies add a sum which varies according to class, and the following table shows how the total pension is made up in each class :—

	Contribution of State.	Contribution of Insurance Society.	Total Yearly Pensions.
	£ s. d.	£ s. d.	£ s. d.
Class I .....	2 10 0	2 16 5	5 6 5
Class II .....	2 10 0	4 4 7	6 14 7
Class III .....	2 10 0	5 12 10	8 2 10
Class IV .....	2 10 0	7 1 0	9 11 0

The amount of the pension does not vary, as the disablement pensions do, according to the number of weeks of contributions paid. But persons under the age of 40 when the law came into force will not be entitled to an old-age pension unless they have contributed for thirty years. Special provisions are made for those who, in consequence of their age, are not able to comply with the terms of the law.

#### Is it State Socialism ?

The pensions that fall due during the first year of the operation of the insurance law, it is calculated, will be paid one-third by the State, one-third by the employer, and one-third by the workman. It is supposed that the average cost of pensions for disablement and old age taken together will be £7 10s. ; but the contribution of the State takes the form of a fixed contribution of £2 10s. to each pension, the effect of which is to give most help to the poorest class, who are in most need of it. The cost to the State in the first year is expected to be £320,000; then it will gradually increase until eighty years hence it will amount to £3,450,000 a year. At that date it is calculated that sufficient capital will have accumulated from the contributions from employers and workmen to provide for pensions that become due, in consequence of which the State subsidy will no longer be required, and will gradually be extinguished. In making this forecast it is assumed that the capital will earn 3½ per cent. The intention is that ultimately the whole cost of the pensions shall be borne by the contributions of the employers and workmen, and the State subsidy is merely a temporary help to enable the existing generation to obtain the benefit of the scheme. If the German scheme had been confined to persons now under the age of 21, no subsidy from the State would have been required or would have been given; for, in that case, the contributions would be equal to the benefits conferred by the scheme. But in the case of persons over that age, and especially of those past 40 years of age, the scale of contributions would be hopelessly insufficient. In effect, therefore, the contribution of the State is temporary, and practically represents the cost of applying the scheme to the existing generation.

Both its admirers and its critics have given insufficient attention to this cardinal feature of the German scheme. That scheme is framed on the basis of being self-supporting without State aid; but no such scheme could be worked, except for the very young, unless help were forthcoming. The necessity of such help will appear from a single example. A workman is 67 years of age when the Act comes into force; by the time he reaches the first week of his seventy-first year he has paid in Class I. for 100 weeks, in all, 7s. But nevertheless he will get an old-age pension of £5 8s. 5d. a year for the small sum of 7s. It is obvious that this difference can only be made good by enormously high premiums upon the young of the present generation, or by taxation, and taxation is a fair way of spreading the burden over a century, instead of making it lie with crushing weight upon a single generation. The German scheme is thus not open to the charge of State socialism. As a temporary measure it may be wise or foolish, expedient or inexpedient, but it is much farther off from socialism than free education. We make the whole charge of education a burden upon the taxpayer or ratepayer, and practically endorse the maxim, "To each according to his needs, from each according to his means." But Bismarck's legislation contemplates the payment of the whole cost of pensions by the employees and workmen; the taxpayer will find nothing of the contributions; and only as a temporary makeshift is he called upon to bear any burden whatever. To make the employer pay one half of the premiums of insurance may be objectionable, but it is not socialism. Unless, therefore, we use the term "Socialism" in a loose sense in which all meaning is taken out of it, we cannot with any propriety describe the German system of pensions for disablement and old age as State Socialism; it may be bad or good, but it is in no proper sense of the word socialistic.

#### The amount of the Contributions

is fixed for the first ten years on the following scale :—

	Employers.	Workmen.	Total Yearly Contribution.
	s. d.	s. d.	s. d.
Class I .....	3 3½	3 3½	6 7
Class II .....	4 8½	4 8½	9 4½
Class III .....	5 7½	5 7½	11 3½
Class IV .....	7 0½	7 0½	14 1½

At the end of ten years, when the insurance societies have brought the anticipations of the actuaries to the test of experience, these rates will be revised and probably increased. At the end of each five years a fresh revision will take place; and it is reckoned that by the end of eighty years the highest rate of contribution that will be required will not exceed the following :—

	Employers.	Workmen.	Total Annual Contribution.
	s. d.	s. d.	s. d.
Class I .....	4 8½	4 8½	9 4½
Class II .....	8 0	8 0	16 0
Class III .....	11 9	11 3	23 0
Class IV .....	15 6	15 0½	30 6½

If

If the calculations of the German actuaries are realised the extreme rate of contribution to pay both the disablement and old-age pensions would vary from 1½d. to 3¾d. a week as a maximum at the end of eighty years from the time when the Act came into force.

The only State interference that forms a permanent element in German legislation is the imposition of an *obligation to insure*. This is not socialism; it is the enforcement of a duty which every man owes both to his neighbours and to himself. Whether that duty should be left to the care of the individual conscience or be strengthened by the sanction of law is an interesting subject of study; but in any case it is the duty of the individual that is established, not a duty of the State towards the individual. The German system is, in fact, the consummation of individualism, not the thin end of the wedge of socialism. In one case only—the provision for disablement and old age—does the State even contribute to help the individual to perform his duty, but that help is limited in both its character and duration.

A law that simply said to the workman, "Thou shalt insure against sickness, disablement, and old age," even if accompanied by penalties for disobedience, would be barren and unpractical. The cost of enforcing obedience would alone prohibit such a measure. Bismarck accordingly avoided the error of applying compulsion to the workman; he looked to the master. This latter method is as easy and simple as the former is complex and difficult. The principle upon which he proceeded was to compel the employer to insure the workman, and to pay for the insurance, leaving him to deduct from the workman's wages the amount that in the eyes of the Legislature the workman might fairly be called upon to contribute. The employer is bound to pay the whole of the premiums of insurance against accident, and one-third of those for sickness; and to this extent Bismarck's legislation rests upon generally-accepted notions of justice. But the half-share of the premiums for disablement and old age must be defended, if defended at all, not upon any abstract principle of justice, but upon grounds solely of expediency. He was able to satisfy the German Parliament that sufficient ground existed for a charge the equitable nature of which is not self-evident.

The principle of the legislation necessarily defines its limits and scope. Insurance is not made obligatory upon those who have no employers. As the obligation is thrown upon the employer, where there is no employer there is no obligation. Bismarck's legislation is compulsory, but not universal. Except, however, in the case of wives of workmen, this limitation is not serious. The gravest defect of the German law is that no provision is made for a widow who survives her husband, nor, except in the case of accident, for a widow who has young children to bring up. These are grave imperfections. The law is nearly complete for men, but for women it is woefully deficient. Unmarried women who are in employment are insured in the same manner as men, but upon their marriage they are cut off from all provisions, and are allowed merely to withdraw one-half of their own contributions to the disablement and old-age funds, if they have contributed for more than five years.

#### *Who must be Insured for Old Age.*

1. All persons over 16 years of age who work for wages or salary (also if partly payment in kind) as labourers, assistants, apprentices, or servants of all kinds, including copying clerks, messengers, night watchmen, sempstresses, laundresses, &c. (but not tutors, governesses, private secretaries, companions, and the like).
2. Clerks in industrial and other establishments, book-keepers, cashiers, commercial travellers, shopmen, shopgirls, tradesmen's apprentices who do not earn more than £100 a year. Assistants and apprentices in apothecaries' shops are not included.
3. Persons employed for wages or salary in the crews of German sea-going vessels, or on vessels employed in inland navigation.

Workmen who become employers, or otherwise are lifted out of this class, may continue their insurance by paying double the contributions of workmen.

Compulsory insurance does not extend, however, to (1) persons who work for food, clothes, and lodging only, receiving no pay; (2) persons unable to earn more than one-third of the customary daily wage in the place where they reside; (3) persons already in receipt of a pension of not less than £5 14s. 6d. a year.

The following persons may, but are not compelled to, insure:—

1. Small craftsmen, shopkeepers, farmers, porters, guides, and generally all who work on their own account and do not usually employ paid workmen.
2. Persons working in their own dwellings, with or without paid workmen, on account of other industrial firms, even although they supply their own raw materials or work temporarily or occasionally on their own account.

#### *The Insurance Offices.*

The German Empire is a Federal Union bearing a considerable resemblance to the constitution of the United States. Subject to the powers conferred on the central Government, each State in the Union retains its own individuality and autonomy. The Imperial Legislature, like the Congress of the United States, consists of a Senate or Federal Council (Bundesrath), consisting of nominees of the Governments of the several States of which the Empire is composed, and a Chamber of Deputies (Reichstag) elected by universal suffrage. The Empire has, for the purposes of insurance against disablement and old age, been parcelled out into thirty-one districts, in each of which a separate insurance society is formed, which deals with all the persons in its district who are subject to compulsory insurance. In a large State, like Prussia, several of such districts are formed, but in the case of the small States of the Union permission is accorded to form one joint insurance society. The relations of these insurance societies to each other and to the Federal Council are the subject of minute regulations which it were unprofitable here to discuss. It will suffice to describe the constitution of one of these societies, for all are framed on the same lines.

Every insurance institute is managed by a board of directors, but the officials are appointed by the State Governments. The board is composed of State officials, or it may include representatives of the employers and workmen. On the board devolves the control of the executive work of the institute. To each institute is attached a committee of at least ten members, one-half of whom are appointed by the employers and one-half by the workmen. The committee settles the by-laws of the institute, it elects assessors to the arbitration board, examines the yearly budget, and, if no council of supervision is formed, it watches over the conduct of affairs by the directing board. If the board is composed solely of officials, then a council of supervision, consisting in equal numbers of employers and workmen, must be appointed by the committee to watch over the proceedings of the board. The members of the board and committee are regarded as trustees and receive no pay, but workmen are entitled to compensation for loss of wages by attendance to those duties. The appointments are made for a period of five years. All the insurance institutes are subject to the supervision and control of the Imperial Insurance Board at Berlin.

#### *How Disputes are Settled.*

All questions arising in connection with the insurance institutes go in the first instance before courts of arbitration, with a final appeal to the Imperial Insurance Office. At least one arbitration court must be attached to each institute. The board consists of a president and at least four assessors, two elected by the employers and two by the workmen. These elections take place in connection with the sick benefit societies. The costs of arbitration are to be borne by the insurance institute. But the court may compel the parties to pay the charges which are caused by groundless applications.

#### *How Contributions are Collected.*

The contributions are collected from the employer by affixing stamps of the proper value to the workman's receipt card. Each workman must obtain a receipt card, which contains spaces for forty-seven contributory weeks; at the end of each week the employer affixes a stamp of the value corresponding to the wages of the workman; forty-seven weeks are taken to be a complete insurance year, thus leaving five weeks for lack of employment. When a person is prevented by illness from continuing his state of insurance, or is called upon for military or naval service, the period of such illness or service is reckoned as equivalent to payment of weekly contributions.

The *Times* correspondent writing from Berlin on 12th January, 1892, says that the system of workmen's cards is giving rise to much dissatisfaction in Bavaria. At the time the Act was passed fears were expressed that such cards might be marked so as to give information about workmen and prevent them getting employment, and stringent penalties were enacted against any attempt on the part of employers to use them for such a purpose. But it seems that the absence of stamps may tell a tale, and show that a workman has been on strike, or that he has not been in regular work. Again, cards get lost, or the holders fall into arrears, or they change their place of residence, and are put to great trouble in getting their new addresses registered. We do not hear complaints from any quarter except Bavaria; but it is probable that considerable improvement may be effected in the machinery by which the Act is carried out. The agitation in Bavaria is not directed against the principle of the Act, which is recognised as sound.

*How*

*How Pensions are Claimed and Paid.*

The person who lays claim to an allowance for old age or infirmity must give notice to the lower administrative authorities in his place of residence. The authorities report upon it to the last insurance institute into which, according to the receipt card, the claimant paid contributions. If the claim is held valid the rate of allowance is at once fixed, and the board of the institute then draw up a certificate of title which specifies the amount of the annuity, the periods of payment, and the name of the post-office at which the payment is to be made. Usually the annuities are paid monthly in advance. If a person entitled to an allowance moves from one place to another the board of the institute notifies his allowance to the post-office of his new domicile, and that office pays his future instalments.

## DENMARK.

This little country, with a population not much over 2,000,000, presents to our attention some interesting facts in connection with the subject of insurance.

*Insurance of Government Officials.*

The Danish law compels every Government official to insure his life for the benefit of his widow. This rule goes as far back as 1740. At that time the science of insurance was in its infancy, and the Danish Government was obliged to pay for its experience. As an example of the errors which were made, it may be mentioned that, in fixing the amount of the contributions to the fund, no restriction was made as regards the age either of the contributor or his wife. Accordingly, alterations were introduced in 1775, 1788, and 1842. It is unnecessary to enter into detail. Under a law of 1851, provision is made for civil service and military pensions in case of old age and infirmity.

*State Insurance.*

In 1842 the Danish Government established a State Insurance Society, with a State guarantee, called "The Life Annuity and Provident Institution." This was intended for the use of the general public as well as Government officials. In 1871 it was reorganised under the title of "The Life Insurance and Provident Society of 1871," with a revised tariff and special facilities for the poorer classes. This institution has now existed for twenty years, and, although it has been carried on under considerable disadvantages, it has proved a commercial success. It cannot advertise, and it is not allowed to establish agencies in the capital; but, notwithstanding, it holds its own with its numerous competitors, and the Government has every reason to be satisfied with its financial position. "At the last quinquennial valuation, in 1885, it was found that, over and above the capital necessary for the working of the establishment and for the discharge of its liabilities, and after the deduction of an ample reserve fund, and of a considerable sum to meet the falling rate of interest on Government securities, there remained at its disposal the sum of 4,500,000 kroner (about £250,000). This gratifying result was due to the rate of mortality being considerably more in favour of the institution than had been reckoned upon, and more especially to the fact that in making the tariffs the directors had calculated upon receiving an interest of 4 per cent. on their invested capital, whereas they had actually received  $4\frac{1}{2}$  per cent. up to the year 1885." This surplus was distributed by way of bonus among the contributors to the institution.

*State Provision for Old Age.*

An Act came into force in Denmark on 1st July, 1891, which introduced pensions for old age wholly out of taxation, and without any contribution from the workman. In view of recent discussions upon the plan favoured by Mr. Charles Booth in this country, the experiment initiated in Denmark cannot fail to be both interesting and instructive. The money is to be provided, one half by the State, and one-half by the local Poor Law authority. The amount provided by the State is £55,550 up to 1895, and after that date £111,100 a year. For England these sums would represent a State expenditure of three quarters of a million and a million and a half respectively. The principle of the Act is an attempt to discriminate between the deserving and the undeserving aged poor. The funds are administered by the Communal Councils through the ordinary machinery of the Poor Law. A vital feature of the scheme is that those persons who receive relief under its provisions are not subject to the electoral disabilities which in Denmark are attached to ordinary poor relief. It is thus intended to withdraw from the old-age pensions the stigma of pauperism. These pensions are given to those who have completed their sixtieth year, and are without means of providing themselves or their dependents with the necessaries of life. The following persons are excluded from the old-age pensions:—

1. Persons who have been in receipt of relief from the Poor Law administration, or have been found guilty of vagrancy and begging during the ten years preceding the date of their application.
2. Those whose poverty has been caused by their own fault, as by a disorderly and extravagant mode of life, or by voluntarily divesting themselves of their property in favour of others.
3. Those who have undergone sentence for any transaction generally accounted dishonourable, and in respect of which they have not received rehabilitation.
4. The pensions are confined to persons who have had a fixed residence in Denmark for ten years preceding the date of their application.

The magistrates in Copenhagen, and outside Copenhagen the Communal Councils, decide as to the nature and amount of relief to be given. No sum is specified, but the relief must be sufficient for the support of the person relieved and of his family, and for their treatment in case of sickness. Should the pensioner be guilty of any action which would exclude from admission to old-age relief, or should he squander what is given to him for his support, the relief ceases.

## HOLLAND.

No system of State insurance for sickness, for accident, or for old age exists in Holland, but a report from our Consul at Amsterdam supplies an account of an interesting voluntary insurance scheme for old-age, established by the Amsterdam Branch of the Employers' Union of the Netherlands.

"Under the auspices of Mr. G. Van Tienhoven, burgomaster of this city, and of a number of the chief employers of labour here, the 'Employers' Union of the Netherlands,' was constituted in the year 1888, chiefly for the purpose of studying the question as to the best manner of improving the lot of working men, and of providing for their support in old-age.

"The leading idea of the promoters of this experiment was that the question was one which could be better dealt with by voluntary co-operation than by the State system of insurance for old-age which is now under discussion in Germany. They considered that the serious obstacles which local circumstances and local needs, in their great variety, place in the way of a universal insurance law, and the difficulty of providing an even moderately sufficient pension for the workmen by means of compulsory insurance, were good reasons for giving the preference to private combination. At the same time it was a principal part of their scheme to secure a State guarantee for the premiums to be paid by employers and workmen jointly.

"The Amsterdam branch of the Employers' Union commenced its operations on the 1st of April, 1889, and includes at present establishments employing about 4,000 workmen in this city.

"The objects of the Employers' Union may be shortly defined as follows:—

- (a) To secure to workmen now in, or in future entering, the service of members a pension of at least 3 fl. (5s.) per week after their sixtieth year, and not payable before their fiftieth year, by the contribution on the part of the employers of at least 15c. (3d.) per man per week, towards the premium necessary to secure such payment, on the condition that the balance of the premium shall be paid by the workman.
- (b) To secure to such youths and apprentices as may have been six months in a member's employment, and who have not yet reached the age of 15 years, a pension on the basis of at least 3 fl. (5s.) per week after their sixtieth year, and not payable before their fiftieth year, by the payment on the part of the employers of the full premium necessary to secure such pension until the persons in question shall have attained their twenty-first year, after which date such employers are only bound to contribute in the portion stated, sub. (a).
- (c) To form a fund for each local branch of the Union, by means of yearly subscriptions and donations from members and well-wishers, and by testamentary gifts, &c.

"The object of the creation of this fund is to ensure, if possible, the payment of premiums on behalf of workmen who might be temporarily incapacitated from continuing their contributions from causes beyond their own control.

"The



Italian workmen or workwomen who are members of a society of mutual aid can alone become subscribers. Each subscriber has a separate account, and he can pay into it as and when he pleases any sum not exceeding £25 a year. He acquires a right to a pension on reaching the age of 60, provided he has been a subscriber for twenty years. He may, however, postpone his pension to a later period in order to increase it. The amount of the pension depends on the subscriptions augmented by the subscriber's share in the money from the central fund. If he dies before the pension age, his subscriptions, with compound interest, are returned to his legatees or successors; but in no case may the pension exceed £25 a year, the object being to confine the benefit of the subsidised central fund to workmen.

In supporting the Bill to set up a National Pension Institute, the Committee of the Chamber of Deputies, while fully appreciating the great work done by friendly societies, "frankly recognises the fact that, in the actual condition of Italian wages, societies of mutual aid are not alone sufficient to provide a competent pension for aged workmen." The proposal has met with large support from working men, and it is expected that at an early date the Pension Institute will be established, and form no unworthy rival to the National Accident Insurance Fund of 1883, to which was awarded the grand diploma of honor—the highest award at the Paris Exhibition.

## FRANCE.

There is now pending before the Chamber of Deputies in France the boldest financial scheme of State-aided pensions for old age that has yet been proposed in Europe. The State paper in which the Government of France recommend the scheme to the French people is so interesting and important that it deserves a full translation. Before, however, placing that document before the readers of the *Dispatch*, some attention may be given to an interesting experiment which has for many years been carried on by the French Government. France, indeed, is the pioneer of State-aided pensions for old age. The experiment to which I refer is one of the numerous projects for the benefit of the poorer workmen which were thrown up by the revolutionary effervescence of 1848. The experiment has, on the whole, proved a failure; and it is precisely in its failure that lies its lesson to us.

*An Experiment in Voluntary Pensions.*

In 1850 an old-age pension fund (*Caisse des Retraites*) was established. It contained the principle of State aid in the form of a guarantee of 5 per cent. compound interest upon the sums paid by the workman towards old-age pensions. The deposit must be in sums of 4s., or multiples of 4s. The depositor must mention the age at which he wished to enjoy his pension; but the age must not be under 50. Each deposit was regarded as a purchase of a pension of proportionate amount at the age stated; there was no obligation to continue payments at stated intervals. Thus, supposing that a payment of 4s. at the age of 20 would purchase a pension of 1s. a year at the age of 50, the workman at once acquired an inalienable right to a pension of that amount at that age. By every successive addition to his contributions he purchased an addition to his pension. There was thus no forfeiture, and no obligation to keep up payments. The workman had the option of making his contributions returnable in case of his death. By three months' notice before the date of the term when the pension became due, the payment might be deferred, with the view of increasing its ultimate amount; but after the age of 65 the pension must be taken. It was also provided that the pensions could not be seized by creditors if they did not amount to more than £14 8s. a year.

What would have happened to this scheme if the men by whom it was originated had controlled its operation must now be a matter of conjecture; but, unhappily for France, between the conception and the realisation of the scheme there was interposed the crime of the 2nd December, 1851. That deplorable event brought into the Government of France a class of men who had other objects to serve than the improvement of the condition of the working classes. No serious attempt was made by Louis Napoleon's Government to bring home to the French workmen the advantages of the scheme. The pension fund was mainly used by Government servants, priests, school-teachers, and small investors who desired good interest for their money. Until May, 1853, there was no limit to the amount which might be deposited.

The most serious defect of the scheme was the obligation of the State to pay interest at the rate of 5 per cent. As the State could not obtain that interest, a loss was occasioned to the Government which threatened to become serious. Accordingly, on 12th June, 1861, the interest was reduced to 4½ per cent. After the German war in 1870, when money became dearer, the National Assembly re-established the 5 per cent. rate. This led naturally to a great increase in the deposits, which rose from £360,000 in 1873 to £2,720,000 in 1881. The result was that by 1882 the fund showed a deficit of £1,680,000. In 1882 the Government found the money to put the funds straight, and reduced the interest again to 4½ per cent. In 1886 another law was passed which limited to £48 the pension to be granted to any one annuitant, and, moreover, made the rate of interest vary according to the rate of Government stock. One effect of the law of 1886 was to take away the motive of the small investor to purchase Government annuities, and the depositors now belong more to the class for whose benefit the pension fund was originally instituted.

The pension fund has evidently failed to provide for the old age of the French workman. Out of 9,600,000 persons in France receiving salaries or wages, there are only 800,000 depositors; and most of the workmen who are insured are interested through the operation of benefit societies or of their employers. The average amount of the pensions is very small, and does not exceed £2 14s. a year.

*A National Workmen's Pension Fund.*

The failure of this experiment, and perhaps the example of Germany, have stimulated the French Government to propose a gigantic scheme of insurance for old age. The new scheme relies for its success upon indirect compulsion. The law imposes upon employers an obligation to pay for the insurance of their workmen; but any workman is entitled to contract himself out of the Act by making a formal declaration to that effect before the mayor of his commune. The premiums are to be paid in the proportion of three-tenths by the employer, three-tenths by the workmen, and four-tenths by the State. With this introduction I now lay before the readers of the *Dispatch* a translation of the State paper in which M. Constans gives the Chamber of Deputies a full statement of the policy of the French Government.

*Statement of Reasons for the Bill by the French Government.*

"The state of opinion, the hopes that are everywhere stirring the labouring classes, the forces that determine the great evolutions of history, render more and more clear and imperious the necessity of effecting social reforms. In France the expectation of such reforms is now uppermost in the mind of the nation. At each of our general elections the country expresses wishes and makes claims that indicate to the public authorities a clearly-defined duty. Our democratic society manifests a growing indifference to the speculations of mere politics; and, on the contrary, drawing away as every day it does more and more from revolutionary Utopias, the more rigorously it holds the Government to the duty of maintaining steadily the public peace and the freedom of labour, the more it shows itself anxious to improve the lot of the working population. Parliament has already, to a very considerable extent, met this want; but many useful questions yet remain to be taken up. Besides, we cannot forget the pledges given to the nation at the elections of 1889. The Bill that we have the honor to lay on the table is intended to ensure the realisation of these promises in reference to a class of interests that the workers regard with the keenest favour.

" I.

"There are no new institutions more ardently desired than those that would guarantee the security of old age. So long as his strength is maintained a man readily resigns himself to the mischances of fate, and finds in his moral and physical vigour elements of resistance that permit him to support the miseries of his condition; but in the state of our civilisation, the spectacle of an old age of weakness and want can no longer be regarded with indifference. Accordingly, there have been established, in recent years, numerous interesting societies based on various forms of mutual association, with the view of providing retiring pensions for their members. This effort, which has been especially supported by the friendly societies, is a strongly-marked indication of an absorbing public interest; but these institutions have as yet had only a limited range.

"One proof of this is the smallness of the allowances that the benefit societies are able to grant. Another proof is the very limited number of members that, without the co-operation of any employer, contribute to the National Pensions Fund. In forty years this fund has registered only 800,000 depositors out of 9,600,000 workmen, representing in France the total number of persons receiving salaries or wages. Further, these 800,000 depositors have been, in large part, brought to the fund by contractors, by industrial companies, or by benefit societies. Hardly any have joined of their own accord.

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" This state of matters results partly from the fact that the idea of thrift is not yet sufficiently diffused, but, above all, from the fact that the workers as a whole doubt whether the accumulation of their modest savings can become really productive. Need there be any surprise that the taste for saving has not found the necessary stimulus in the attraction of pensions of the average amount of eight francs a month ?

" It is important, then, to come to the assistance of the workers, not only by stirring up in them solicitude for their future, but by furnishing them with the means of rendering their good intentions effective in fact.

" If the State were to put itself entirely in their place, the object in view would not be attained ; instead of spurring private persons to take the initiative, we should render them still more apathetic ; instead of encouraging the emancipation of the democracy, we should benumb still more the energies of individuals. In order to obtain truly fruitful results in the social point of view, people must be left free to act in providing for their future ; but this freedom must find adequate bases of support. Such bases of support have hitherto been wanting.

" Unquestionably, many employers have for long displayed a zeal that cannot be overpraised. The large manufacturers especially have increased in their establishments the number of organisations for providing pensions, for the maintenance of which they have imposed on themselves very heavy sacrifices. In these circumstances, the employers have been inspired, before all other considerations, with lofty and philanthropic sentiments ; and they have had the satisfaction of seeing that everywhere where their kindly intentions were carried into practice, the peace of society was being strengthened, a lasting agreement was uniting capital and labour ; but the initiative taken in these cases is far from being generally adopted, because of the want of an organisation to facilitate its extension. The question thus arises whether, in order to guarantee to workers rest in old age, it would not be proper to appeal to the employers and to the State for their co-operation, by making them participate, under certain conditions, in the maintenance of institutions that would receive the savings of the workers, in order to invest them and apply them to obtain retiring pensions. The employers have too much interest in securing the peace of the factory or of the workshop not to appreciate the advantages of an organisation that would bind their men more closely to their daily task. The workman will unquestionably display more ardour in his work when he has the certainty of increasing by his assiduity the sums that he and his employer are able to contribute to the Pension Fund. The co-operation of the employers, such as we conceive it, would have to be, moreover, regulated in such wise as not to add too heavily to the general cost of production.

" As to the State subventions, these would in some sort cement the association of workmen and employers. They would undoubtedly involve sacrifices the importance of which may be considerable, and the problem for solution is one that cannot receive too great attention ; but the national labour, the public wealth itself, cannot but reap a large profit from reforms designed to render the future of the workman less uncertain, and Parliament will no doubt be willing to accord satisfaction to wishes that are recognised by every one as legitimate.

## " II.

" To what extent are the workmen and the masters able to contribute to the formation of a pension fund ? An admissible rate of contribution being fixed, what results may be expected ? Such are the first questions for consideration.

" Workmen, it is superfluous to say, can save but little, and their power to save anything is frequently reduced by sickness and by want of work. Deducting from the full year the holidays, the times of probable want of work, and the ascertained average period of illness for a given group of population, it seems difficult to admit that a workman can have the opportunity of saving during more than 290 days a year.

" It is necessary, on the other hand, that the saving in view of superannuation should not require of him a sacrifice which, appearing excessive, runs the risk of repelling him. An ever-increasing number of workers are already taking upon themselves a variety of charges in the societies of which they are members, in order to protect themselves against want of work or sickness, and they will not come to the institution that we are proposing if the effort required of them be out of proportion to their means.

" A contribution of 5 to 10 centimes ( $\frac{1}{2}$ d. to 1d.) a day appears to us a maximum that it is expedient not to exceed.

" To charge the masters with a contribution of equal amount would, we believe, be to ask of industry a sacrifice that it would be willing to make, but that clearly could not be increased without seriously trammelling production.

" A workman, or *petit employé*,\* is scarcely in a position to save before the time when, having overcome the first difficulties of his career and left the army, he enters on the active period of work and begins to make a sufficient income.

" Thus it appears that the time when the workmen could begin to pay into the Pension Fund must be placed towards their twenty-fifth year ; but, in order that they may pay in continuously, it is necessary that their entry on the enjoyment of the pension be not deferred so long as to discourage their good intentions. There certainly would not be many members that would be inclined to go on making payments for more than thirty years. Now, what would a workman or a *petit employé* obtain if he invested, for thirty years, at the rate of 4 per cent., which is at the present time secured by the National Old Age Pension Fund to its depositors—(1) A sum of 5 centimes ( $\frac{1}{2}$ d.) a day ; (2) a sum of 10 centimes (1d.) a day, with an equal contribution by the masters in each case ?

" The result of the first of these two combinations is a pension of 180 francs (£7 4s.).

" The result of the second combination is a pension of 360 francs (£14 8s.).

" These figures, we do not hesitate to say, are insufficient, because the total amount of the pension would be too small to determine the persons interested to a continuous effort. We remarked above that there is displayed in the working population a remarkable eagerness to make provision for the future, but a select portion only do actually make such provision, and, in order to win over the large majority, it is indispensable to make them foresee a really serious amelioration of their lot. On this condition only will it be possible to incite the labouring population to a long and continuous effort, and to cause to reign in France between capital and labour a union that the past has never known.

## " III.

" We have just shown that, on the basis of simultaneous payments of 5 to 10 centimes ( $\frac{1}{2}$ d. to 1d.) a day for the workmen and the employers, during a period of thirty years, there could be assured, according to the actuarial calculations, only pensions of 180 to 360 francs—sums too insignificant to give to the persons interested an adequate security and to encourage them to save.

" We propose to associate the State with these combinations by making it co-operate in the formation of pension funds by a contribution equal to two-thirds of the total contributions asked from the workmen and the masters.

" It is admitted as an axiom in economical science that the intervention of the State is legitimate in all cases where private initiative fails. Now, if ever, is the opportunity for the application of the principle.

" The State intervenes merely to complete what isolated individuals are unable to do. It merely comes to the aid of the thrifty workman who, if left to himself, could not, on his wages alone, make sure of bread for his old age.

" The Bill provides, moreover, for the fixing of a maximum for pensions, which does not exceed the needs of maintenance, because it is only on this basis that the pecuniary encouragement of the State can be for the public good.

" In these conditions, it seems that even the most rigid *laissez faire* theorists cannot dispute that it is legitimate for the State to make a financial contribution. Perhaps socialistic tendencies may be discerned in this reform, but a word—and especially the word 'socialism,' which has been so much abused—cannot be a determining reason for the rejection of a proposal that tends only to strengthen and fertilise individual action.

" The Republic must be based only upon freedom. The opposite system would strike at the notably independent character of the French workman, who would not willingly endure the authoritative tutelage of the State. Accordingly, while the new law assumes that those that can profit by it intend to claim the benefit of it, it would suffice to destroy this presumption if they made a contrary declaration before the Mayor of the commune in which they are employed.

" The contributions which we wish to ask from workmen would therefore be solely voluntary. The pension system would not be at all compulsory. The worker would be the artificer of his own future security. He could, in case of necessity, break off, and afterwards resume, his payments. It is his decision that would, in each case, engage those of the master and the State, while these, on their side, would be liable to contribute to the service of the pensions only if the persons interested themselves contributed to it. So far from constituting an invasion of the freedom of the citizens, and an attack on private enterprise, the scheme relies on the spirit of individual foresight and providence.

" The new burden, moreover, would constitute, in part, only a simple transfer of charges.

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\* Under the term *petit employé* would be included the great variety of persons employed in work that is not manual—as postmen, policemen, clerks, messengers, and so forth.

"By securing the old age of the labouring population the cost of public relief would be to a large extent diminished, and by the amount of this diminution the item for pensions in the budget would fail to be reduced.

"If we have no poor tax in France we certainly have a budget for the poor. To transfer a part of the expenses of this budget to an account opened for provision for the future would not be merely to undertake a justifiable financial operation; more than that, it would be to accomplish a high moral reform.

#### "IV.

"We propose to you, accordingly, to create, by the side of the National Pension Fund, a Workmen's Pension Fund for the benefit of workmen, employés, small farmers, and domestic servants of both sexes, being Frenchmen or Frenchwomen, with incomes under 3,000 francs (£120) a year.

"This fund would be supported—

"(1) By the contributions of the depositors, increased by equal amounts from the masters that employ them;

"(2) By contributions from the State.

"Every person hiring out his services would be presumed to wish to take advantage of the benefits of the law, but, at the same time, a declaration to the contrary could be made before the mayor of the locality where the depositor lives. Where this declaration is not presented every master will have to stop from the sums owing to the person whose services he hires a sum of five centimes (½d.) at least, and of ten centimes (1d.) at most, per working day, and he will be liable to contribute to the savings of his employé in an equal sum.

"If the funds thus constituted by the co-operation of the men and the masters had had to be paid compulsorily to the Workmen's Pension Fund, the result would have been, so far as the State is concerned, an accumulation of funds and an increase of charge little in harmony with the liberal character of the law. We should have run the risk, moreover, of putting a drag upon the progress of private enterprise, of discouraging the inspirations of philanthropy, and of limiting the institutions for making provision for the future and for providing mutual assistance, which, on the contrary, it is necessary to stimulate and to expand. There is a great public interest in the development of those institutions in which the democracy is learning the business of government. Everything that can extend their action is calculated to strengthen the public peace.

"We are entitled to expect a great deal in particular from the benefit societies which have already, and with such just title, succeeded in inspiring the worker with so much confidence. In order to induce him to deduct from his modest wages the sums necessary to pay for a pension, there are obstacles to overcome, explanations to give, advantages to lay stress on, which necessitate the assistance of enlightened men living in the very midst of the persons interested. The benefit societies can be, in this point of view, invaluable auxiliaries.

"We have desired, therefore, to join as first collaborators in the undertaking that we are establishing the benefit societies, the pension societies, the trade associations, and, in a more general way, the whole of the provident funds regularly authorised. These societies and funds may, if they wish, bring to the central fund the sums collected by them for the benefit of their members under the conditions of the new law; but, if they prefer, they may keep the administration of them, and provided they observe the general provisions regarding the ordinary investments of benefit societies, they may manage their resources for themselves.

"One recognises all the importance for the full success of the law which would attend such a decentralisation of funds together with such a multiplicity of efforts. Among the difficulties and the objections that we had to consider, there are none more serious than those that arise from the inevitable necessity of collecting and employing considerable funds. The pensions towards which we wish the workers to bend their steps must be formed by means of investments which it would manifestly be desirable to manage apart from the action of the State. If the State were to undertake the whole charge of them, it would be led to acquire such an amount of moneys and properties that its position in finances and estates would not be long in disquieting opinion.

"This accumulation of funds might be avoided, it is true, if the State confined itself, in return for the payments of those that are to be superannuated, to contracting with them an obligation to pay a pension. It is the system that the law of 1853 adopted for the State employés; but it is well known what criticism it provoked. It relieves the present only by throwing upon the future charges that may become very heavy. The reform of the law of 1853 is immediately contemplated, and it is not when this reform is judged indispensable that the State would be able to extend the defective system of the pensions for State employés to a vastly greater number of persons. It is necessary, on the other hand, that the contributions of the workers should not go into the budget, and that they be not, on any account, merged in the mass of taxation. To the separate account-book, delivered to each depositor, there must correspond a certain value, the fruit of saving, and a material proof of the potency of provident foresight.

"To entrust private institutions with the employment of the deposits collected with a view to workmen's pensions is therefore at one stroke to testify to the solicitude of Government for these institutions, to gain for our undertaking customers already enlisted, to rally to our cause excellent converts, and to facilitate by decentralising them the investments which form the keystone of the new law.

"It was necessary, therefore, not only to authorise the co-operation of these institutions, but to solicit it by special attractions. The more active the intervention of the benefit societies, for instance, the better will be the chance of the labouring population, for whom our project is designed, to profit by it. Hence special provisions, whose range will be readily appreciated when we have defined the nature of the right which, in a general way and on principle, would be henceforth secured for all the depositors.

#### "V.

"On every occasion when a payment is made arising, as we have seen, from the combined contributions of the workman and the master, there will be opened a separate account-book, similar to savings bank books. In each account-book the contributions of the depositor will be entered. These contributions will be increased by two-thirds by the State. Here, in general outline, is the project. Let the worker make the desired deposits from the age of 25 to the age of 55, and at 56 he will enter on possession of a pension which he will enjoy to the end of his life.

"Here is a life annuity formed, in reality, on capital spent or sunk. Now, would not the ideal be that the worker should be able to save up, not only for himself, but for his family? Would not a provision for the family of deceased workmen be infinitely desirable? They wish for it—of this there is sure proof: when they have their choice between a life assurance where their premiums are not returnable, and a life assurance where their premiums are returnable, the workers most frequently declare in favour of the latter, in spite of the greater effort which it demands of them or the diminution of the amount assured which it implies. This solicitude for the interests of the family is, it may be said, among the most generous instincts of the French democracy.

"By the savings that he can realise every year during the period of health and strength, with the view of forming for himself a life annuity at the age when he will become unable to work, the workman insures himself only against one of the principal risks to which he is exposed—namely, old age. He does nothing to protect his family against the penury into which his death may plunge them.

"In order to be certain of leaving a provision to one's family at whatever age death may strike him down, the workman must add to the assurance of a life annuity the assurance of a capital sum on death, by means of an annual premium payable up to the age of assumed inability to work.

"Thus, by means of thirty-one payments of 21 francs 75 centimes (say 17s. 6d.) a year, made from twenty-five to fifty-five years of age inclusive, one insures for oneself a life income of 135 fr. (£5 8s.); and, in order to obtain the same annuity, and, in addition, to insure on death, at whatever time it may happen, after two years' assurance, a sum of 652 fr. 50 centimes (£26 2s.), there is needed only a further payment of 11 fr. 98 centimes (say 9s. 7d.) a year, during thirty years at most.

"Our duty was, in these circumstances, clearly marked out. By the terms of the Bill depositors will be able to contract with the Life Assurance Fund, established by the law of July 11, 1868, a life assurance for a sum varying from 500 fr. (£20) to 1,000 fr. (£40), equivalent to the total amount of the sums that they would have to pay individually to the Workmen's Pension Fund. This assurance would be contracted on promise of payment of thirty annual premiums.

"The State will charge itself with the payment of one-third of these premiums. But it will pay one-half of them for those depositors whose contributions have been invested by a mutual benefit society, or any other provident society. The depositors will, therefore, find it to their advantage to avail themselves of the assistance of these institutions; and these institutions, on their side, will have an interest, in order to increase the number of their members, in undertaking themselves the pension business, instead of leaving to the State the exclusive charge of the management of the pension funds.

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"To this first inducement we have added another. We had to concern ourselves for the fate of those workmen, injured or disabled, whom accidents in the course of their work render incapable of providing for their needs, and, *a fortiori*, of keeping up the payment of their premiums. Such workmen as would be prevented by infirmity from working will have their pensions paid from the date of their infirmity. The annual sums due from them will be completed—to the extent of one-half in the case of those whose payments have been made to the Workmen's Pension Fund; to the extent of the whole in the case of those whose payments have been invested by a mutual benefit society or a provident society.

"It is thus seen in what a spirit of decentralisation the project has been conceived, and what impetus it is intended to impart to private enterprise quickened by association.

"The State will still have, in any event, capital sums to provide, chiefly to meet its individual contribution to the sacrifices of the workmen and the masters. Its payments must form a special fund; and they must not be used to increase the incomes of the depositors, when their pension, taken in conjunction with their other receipts, would come to exceed 600 francs (£24).

"By annexing the new institution to the National Old Age Pension Fund, we have given, after all, every guarantee for the best employment of the sums that the State will have to invest.

#### " VI.

"It will not have escaped your notice that the benefit of the law is reserved exclusively for French workmen. This being so, there would perhaps be room for fearing that certain masters would give the preference to foreign workmen. To ward off every danger, it is indispensable that foreigners take no advantage from any privilege. The only way to put them on an equal footing is to settle that the masters shall make in respect of each workman of foreign nationality a payment of 10 centimes (1d.) per working day. No one will attribute the character of a tax to the contribution that we propose to ask from masters for their foreign hands. It is neither a poll-tax nor an impost on individuals; it is solely designed to prevent our countrymen from losing the advantages that we mean to assure to them.

"The number of foreigners in respect of whom these payments may be made is reckoned at 1,000,000. At 10 centimes (1d.) a day, this would bring in 100,000 fr. (£4,000). The annual total of this revenue might reach 29,000,000 fr. (£1,160,000.) Let us add that these sums will not be immediately spent; they will be used only as pensions are commenced, and in the meantime they will be invested.

"This will be the first element of a general fund which will be increased by gifts and legacies, which the new institution is authorised to receive.

"This fund will be increased, further—

"(1.) By the sums remaining available from the contribution of the State in consequence of the payment of pension exceeding 600 fr. (£24), or for the benefit of the depositors possessing incomes exceeding 600 fr. (£24).

"(2.) By sums arising from the payments of the State, and withdrawn from the account of the depositors in consequence of interruptions of payments in breach of the conditions laid down by the law.

"(3.) By payments or arrears of annuities unclaimed after a certain time.

"(4.) By interest on the general fund.

"These are the revenues of this general fund which will be used to complete, as has been seen, the annual premiums paid to the Life Assurance Fund, and to pay in advance the pensions of the workmen that shall have been prevented by infirmity from working.

#### " VII.

"What will it cost the State to carry out the undertaking? This is evidently subordinate in importance to the use the workers will make of the instrument which the Government places at their disposal. We must therefore, on this point, confine ourselves to merely approximate calculations.

"On the results of the census of 1886, published by the Minister of Commerce and Industry, the number of workmen is 9,101,469.

"In this total there ought not to be included the foremen (or overseers) and employés making more than 3,000 fr. (£120) a year. These may be reckoned at about 500,000. This deduction brings the number of salaried workers down to 8,601,469.

"But there are to be added such of the agricultural population as are neither owners nor capitalists, nor workmen nor agricultural labourers. These are vine-dressers or small holders, having but a limited stock of implements and their arms as the whole means of existence. They number about 1,000,000; small farmers of comfortable means are not included among them. We should thus reach a total number of 9,601,469. As we have allowed that the payments would extend over a period of thirty years, commencing only at the age of 25, there falls to be deducted from this figure the workers under 25 years of age, say 40 per cent. of the whole, according to the indications furnished by the statistics of the population. The possible number of members would thus be 5,760,000; but, according to probabilities founded on former experience, there is scarcely room to hope for more than 3,000,000 accounts at the end of thirty years, and the charge to the State would be about 100,000,000 fr. (£4,000,000). This charge would appear when the new system is in full working order.

"It has seemed to us legitimate, indeed, to grant the benefits of the system of pensions to the workmen who, having almost reached old age at the time of the promulgation of the law, could not reap the advantages of it. These are principally the persons whose pensions are already paid for, and those that, paying for nearly thirty years into the National Fund, would obtain from that institution only a pension inferior to that which we propose.

"We have been anxious to place before Parliament the outside figures of the cost that may eventually fall upon the State. There will be found in the numerous tables appended to this Memorandum all the elements necessary for estimating the financial effort that must be prepared for. But, however great it may become, it will be observed that at the start it will be inconsiderable; even on the supposition that the success would exceed our expectations, the additional burden on the budget, remaining gradual, could be faced with confidence. The magnitude of the undertaking which we invite Parliament to establish, its beneficent influence on the advance of democracy, would embrace besides all the budget arrangements necessitated by an enterprise of national importance.

The detailed arrangements for carrying out the project will be settled by an Administrative Decree. For example, it will be necessary to make a special effort to remove all those small difficulties which at present give a pretext for indifference even to the best disposed workman. It is indispensable that, without loss of time and without formalities, he shall be able to pay in his contribution, whether every day, or at any time when he is at leisure to do so. We believe that for this purpose there might be turned to account a method already explained, according to which there would be placed on sale at the Treasury, in the town-halls, and at the tobacconists' stamps to the value of 5 or 10 centimes ( $\frac{1}{2}$ d. or 1d.), which the workman and his master would then affix to a special sheet bearing the name of the depositor, and which would be cancelled. Every three months at least the depositor would present these sheets, either at the town-hall of the commune in which he is or at the tax-collectors, and he would be credited on his pension book with the amount of the value of his stamps. Whatever executive arrangements may be made, this principle will always have to be kept in view—namely, that in order to assure the success of a popular system of pensions the means of saving cannot be rendered too accessible to the workmen.

"Let us remark, finally, that, by a special provision of the law, we declare that the retiring pensions shall not be subject to legal seizure. This privilege will render the pensions absolutely secure.

"These few remarks indicate sufficiently the spirit in which the new project has been conceived.

"The Government is far from pretending to offer a perfect solution; but, by developing by means of these important advantages the taste for saving among the working populations, it believes it will effect a considerable advance. It will be happy to have the remarks of the representatives of the country on this subject, and to accept the practical improvements that may result from them. It addresses itself, therefore, with confidence to Parliament, which will be heartily desirous of assuring to the workers the security and dignity of their old age. It appeals to the general goodwill in this work of social provision for the future and social equity."

#### *The Text of the Bill.*

##### Part I.

1. There is established, for the benefit of the workmen, employés, small farmers, or servants of both sexes, being Frenchmen or Frenchwomen, whose annual means are under 3,000 fr. (£120), a Workmen's Pension Fund, which is annexed to the National Old Age Pension Fund, governed by the law of July 20, 1886.

2. This fund is supported by—
- (1) The direct contributions of the depositors, increased by equal sums paid by the masters employing them.
  - (2) The contributions made by the State under the conditions hereinafter stated.
3. He that hires out his services is presumed to wish to avail himself of the advantages of the law, in the absence of a declaration to the contrary before the mayor of the locality where he lives. A receipt of this declaration will be delivered to the declarant.
- In default of the production of this receipt, the master will have to stop from the sums owing to the person whose services he hires a sum of 5 centimes ( $\frac{1}{2}$ d.) at least and of 10 centimes (1d.) at most, per working day, and will be bound to contribute to the savings of his employé in an equal sum.
4. The sums thus made up will be paid at least every three months, either to the Workmen's Pension Fund, or to a mutual benefit society, or to a pension club, or to a trade association, or to a provident fund regularly authorised. They must be credited to a special account.
- The benefit societies, the trade associations, the pension clubs, and other provident societies may either invest the funds thus received under the conditions provided by the law relating to benefit societies, or deposit them with the Workmen's Pension Fund.
5. Societies other than the benefit societies authorised by the State will not be allowed to give their members the benefit of the present law, except by virtue of a decree of the Minister of the Interior [Home Secretary].
6. The payments entered in the account-book of the depositors will receive an addition of two-thirds from the State. The total amount of these sums will be inscribed annually at least in the account-books.
7. In support of the first request for the State increase, the depositor will have to declare, and to have it certified by his master and the mayor of his commune, that his annual means do not reach 3,000 fr. (£120).
- At the time of the payment of his pension, he will have to prove that he does not enjoy an income exceeding 600 fr. (£24).
- Every false declaration will be punished by a penalty of 50 fr. to 500 fr. (£2 to £20), and will entail the cancelling of the State increase.
8. The depositors may contract with the Life Assurance Fund instituted by the law of July 11, 1868, by means of thirty annual premiums, a life assurance for an amount varying from 500 fr. to 1,000 fr. (£25 to £50), equivalent to the total of the sums that they would have to pay individually to the Workmen's Pension Fund.
- The State will charge itself with one-third of these annual premiums.
9. In order that the sums given by way of increase by the State may definitively be secured to the depositor, it will be necessary for him to have paid contributions from the age of 25 up to the age of 55 years.
- Interruptions of contributions, which may not exceed five years in all, are allowed on grounds of inevitable necessity in favour of depositors who shall justify them. The arrears will have to be made up.
10. The life annuities to which the sums entered in the workman's account book will give a right will be inscribed in the ledger of the National Old Age Pensions Fund. The payments arising from the contribution of the State will be applied to form the fund, but so that this pension, together with the depositor's other income, shall not exceed 600 fr. (£24).
11. Every master employing foreign workers of either sex will have to pay 10 centimes (1d.) for each working day of these workers.
12. There will be formed a general fund by means of—
- (1) Gifts and legacies given to the Workmen's Pension Fund ;
  - (2) The contribution paid by the masters employing foreign workmen ;
  - (3) The sums remaining available from the contribution of the State in consequence of the payment of pensions exceeding 600 fr. (£24) or for the benefit of depositors possessing incomes exceeding 600 fr. (£24) ;
  - (4) The sums arising from the contributions of the State and withdrawn from the account of the depositors in consequence of failure to keep up their contributions ;
  - (5) Arrears of annuities not claimed within a certain time ;
  - (6) Interest on the general fund.
13. The proceeds which support annually the general fund will be applied :—
- (1) To complete, to the extent of one-half, the annual premiums paid to the Life Assurance Fund by the depositors whose funds shall have been invested by a mutual benefit society or by any other provident society ;
  - (2) To pay in advance the pensions of the workmen, employees, small farmers, or servants, prevented by infirmity from working, to the extent of the whole of the pension in the case of those whose payments shall have been invested by a mutual benefit society or a provident society, and to the extent of one-half of the pension in the case of those whose funds have been paid to the Workmen's Pension Fund ;
  - (3) To assist, in exceptional cases, those that temporarily fail to keep up their contributions in consequence of accidents ;
  - (4) To the cost of management of the Workmen's Pension Fund.
14. The retiring pensions paid under the present law can be neither alienated nor subjected to legal process.

#### Part II.—Temporary Provisions.

15. The persons mentioned in the first clause, being over 25 years of age and under 40, may take advantage of the provisions of Part I on condition of commencing their contributions in the year following the promulgation of the law.
16. The life annuities already made by the National Pension Fund will receive an addition of two-thirds under the limitations stated in clause 9, provided that they have been produced by at least ten annual contributions.
17. In like manner, the life annuities arising from payments already made by the depositors or to be formed by the benefit societies will receive an addition of two-thirds on their payment, and under the same limitations and conditions.
18. An Administrative Decree will settle the proper arrangements for assuring the carrying out of the present law.

#### *Cost of Old-age Pensions.*

There is perhaps no subject on which more hazy notions prevail than the cost of old-age pensions. It is not too much to say that three-fourths of the suggestions that are published would not see the light had the authors the remotest idea of the cost of their schemes. Much also of the criticism that is directed against the inadequacy of pension schemes would lose its point if the critics would only look at the question from the financial standpoint. Perhaps the best way of bringing home this point is to take a moderate pension scheme, such as that recently adopted by Parliament for the police, and ask what it costs. The police pensions include officers as well as men, and this circumstance makes the comparison not entirely on all fours with schemes intended to apply solely to workmen ; but the difference is not very great, as, although officers receive larger pensions corresponding with their pay, they are few in number relatively to the whole Force. The Act providing for the pensions of the Scotch police lends itself most conveniently for the purposes of illustration. Under that Act the age at which a man may retire as a matter of right is 55 ; and the average pension is about £1 a week. The Act also authorises gratuities to be paid to those policemen who at an earlier age are compelled to retire in consequence of want of health or strength, and it also provides pensions for those who are injured in the execution of their duty, and for the widows and orphans of those who are killed. But the main expense is the superannuation allowance of, upon an average, £1 a week at the age of 55. To meet this liability a Government grant of £40,000 a year was allocated, to which has to be added a deduction from the wages and salaries and certain other items, which add fully £8,000 a year. The Government actuary assured the Committee which passed the Bill that the provision of £48,000 a year was enough, but not more than enough, to provide for the proposed benefits. No doubt was cast upon this estimate, but nevertheless the Government insisted upon making the ratepayers liable for any deficiency, should the calculations prove erroneous. There are in round figures 4,000 members of the Police Force, so that the premium for insurance against old age and injuries received in the execution of the policeman's duty amounts to no less than £12 per man per annum, or nearly 5s. a week on the average for every member of the Force. If we were to provide for the working men of Scotland superannuation allowances no higher than the amounts deemed reasonable for policemen, the cost would hardly be less than £7,000,000 a year, or twice the total expenditure of all the local authorities in Scotland. A simple fact like this may have more effect in moderating our expectations as to the nature of the old-age paradise that it is possible to secure for the great bulk of the people than many pages of argument.

*How*

*How to calculate old-age pensions.*

The cost of providing a pension for old age depends upon a variety of circumstances, and it may vary within wide limits. Suppose a man, age 20, wishes to buy at that age by a single payment a pension of £25 a year to begin at 65, the cost may be as low as £10 4s. 8d., or as high as £34 11s. 6d. It all depends upon the conditions. If the money is an absolute payment, not to be returned in any event, and it is invested at 5 per cent. compound interest, the lower sum would suffice; but more than eight times as much is required if interest is reckoned at only 2½ per cent., and the money is returnable on demand. This is an extreme example; and according as the conditions vary, the price may be any sum between. The chief elements that influence the cost of pensions are—(1) the rate of interest on the money invested to produce the pension; (2) the age at which the payments begin, and the number of payments; (3) the age at which the pension becomes payable; and (4) whether the premiums are non-returnable or are returnable, and if so, in what events, and whether with or without interest. Each of these elements may be separately considered and illustrated.

*Effect of rate of interest.*

In order to show the difference in cost of pensions through variations in the rate of interest on the premiums invested, I have prepared the following table, based on the figures supplied by an eminent actuary, Mr. W. Sutton, to the Committee of the House of Commons to which was referred last year the London School Board's Superannuation Bill. Mr. Sutton's tables, it is proper to state, are based on the assumption that during the period of contribution the mortality will follow that of general population as shown in the highest life-table No. 3, and that during the currency of the pensions the mortality will be the same as shown in the Carlisle table. This table shows the cost of a pension subject to the following conditions:—the age of the insurer is 20; he desires a pension of £25 a year at the age of 65; the premiums to be non-returnable. The second column shows the cost of a single payment at the rate of interest shown in the same line; the third column gives the annual premium required, assuming it to be paid yearly from the age of 20 till 65.

Cost of pension of £25 at age of 65. Subscriber is 20 years old, and the premiums are not returnable.

Rate of Interest.	Single Payment.		Annual payment from 20 to 65.	
	£	s. d.	£	s. d.
2½ per cent.	35	16 2	1	11 8
3	27	15 3	1	6 6
3½	21	11 5	1	2 1
4	16	15 10	0	18 5
5	10	4 8	0	12 9

The difference between the cost, whether by a single or by an annual payment, at the rate of 2½ and of 5 per cent., is very striking.

*Age at which premium is paid.*

A still more important factor is the age at which a pension is purchased or the annual payments begin. In youth it is cheap to make provision for old age, but unhappily that is the time when the drawbacks to old age do not haunt the imagination; when old age, with all its grisly terrors, draws near, the cost rises to a point that is almost prohibitive. In order to show the effect of the age of payment, I again have recourse to Mr. Sutton's tables, and assume 3 per cent. is the rate of interest. Suppose a person wishes to obtain a pension of £25 a year at 65 (premiums not returnable), the price will vary according to his age when the payments begin, in the following manner:—

Age when Payment begins.	Single Payment.		Annual Payment from Age named till 65.	
	£	s. d.	£	s. d.
20	27	15 3	1	6 6
25	33	12 2	1	14 0
30	40	17 6	2	4 6
35	49	19 0	2	19 5
40	61	9 9	4	1 10
45	76	8 7	5	17 11
50	96	7 6	9	2 3
55	124	7 7	15	19 0
60	165	13 5	37	11 5

A glance at this table shows how rapidly the cost of providing pensions increases with age, and impresses the necessity of beginning early, if we do not mean to be too late.

*Age at which pension begins.*

It is obvious that the cost of a pension to begin at 50 must be very much higher than if it commenced at 60; in a general way the fact is obvious, but it is desirable to give some precision to our ideas on the subject. For this purpose, I have arranged a table based upon the Post Office scale of annuities. These are calculated on a lower rate of interest, 2½ per cent., the premiums not returnable. Again, I take the case of a man, age 20, who wishes to secure a pension of £25 to commence at the ages under mentioned:—

Age at which Pension begins.	Single Payment.		Annual Payment.		No. of Annual Payments.
	£	s. d.	£	s. d.	
50	122	18 6	6	13 4	30
55	86	17 6	4	7 6	35
60	58	13 0	2	16 3	40
65	36	19 6	1	15 5	45
70	29	18 6	0	18 9	50

Thus a person at the age of 20 buying from the Post Office a pension of £25 a year will have to pay about six times as much if the pension is to begin at 50 as it would cost him if the pension begins only at 70. The cost of the pension at 55 is more than twice the same pension at 65.

*Premiums returnable.*

If the premiums are not returnable, the survivors get the advantage accruing from the predecease of subscribers before the pension age. The cost must obviously be greater if the money is returnable on death before the pension age, or during the lifetime of the subscriber, and it must also vary according as interest is or is not paid on the money returned. For the purpose of illustration, however, it will be sufficient to give one example, and for this purpose, I assume the same conditions as in the preceding table, with this difference only, that the money is returnable during life or at death before the pension age without interest. Again, I follow the Post Office tables.

Cost of a pension of £25 a year payable at under-mentioned ages; payments to be made or begin at twenty; interest 2½ per cent.; money returnable on demand or on death without interest.

Age at which Pension begins.	Single Payment.		Annual Payment.		No. of Annual Payments.
	£	s. d.	£	s. d.	
50	186	19 6	8	15 0	30
55	147	16 0	6	5 0	35
60	113	4 6	4	9 7	40
65	84	11 6	3	2 6	45
70	61	19 6	2	3 9	50

On comparing this with the preceding table it will be observed that the cost of a pension of £25 a year beginning at 70, paid in one sum at 20, is only £20 18s. 6d., if the money is not returnable, but is £61 19s. 6d. if the premiums are returnable. The one is three times as great as the other. If, however, the pension begins at 50 the difference is only £64 (£186 19s. 6d. less £122 18s. 6d.). This result, which at first sight appears startling, is due to the fact that the number who die before the age of 70 is vastly greater than the number who die before 50, and the older the period at which the pension begins the greater the advantage is to the survivors.

PAUPERISM

## PAUPERISM AND OLD AGE.

A return obtained by Mr. Burt gives the exact number of persons over 60 years of age who on 1st August, 1890, received poor relief in England. It does not, however, include lunatics in asylums, licensed houses, and registered hospitals, vagrants, or persons to whose wives and children, but not to themselves, relief was granted:—

Ages.	Indoor paupers.			Outdoor paupers.			Total of paupers.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
60 and under 65.....	8,018	5,354	13,372	5,959	21,849	27,808	13,977	27,203	41,180
65 and under 70.....	9,468	6,339	15,807	10,567	35,866	46,433	20,035	42,205	62,240
70 and under 75.....	9,953	6,856	16,809	17,633	43,266	60,899	27,586	50,122	77,708
75 and under 80.....	7,086	5,298	12,384	16,474	32,021	48,495	23,560	37,139	60,879
80 and over.....	4,949	4,803	9,752	12,456	22,652	35,108	17,405	27,455	44,860
<b>Totals</b> .....	<b>39,474</b>	<b>28,650</b>	<b>68,124</b>	<b>63,089</b>	<b>155,654</b>	<b>218,743</b>	<b>102,563</b>	<b>184,304</b>	<b>286,867</b>

This table gives some instructive information. Notwithstanding that after the age of 60 the population is rapidly thinned by death, we observe that the number of paupers over 80 exceeds the total between the ages of 60 and 65. Among the outdoor paupers the excess in the number of women is noticeable. But the true lesson of these figures only comes out when we compare the number of paupers with the total population of the corresponding ages. The return gives us the number relieved on a particular day; but it does not tell us how many would receive relief in the course of a year. The total can only be estimated. A calculation is to be found in Mr. Charles Booth's paper, read before the Royal Statistical Society in December, 1891.

Table showing proportion of paupers to population of different ages:—

Ages.	Paupers.	Population.	Per cent.
Under 60.....	1,247,697.....	28,866,294.....	4·6
60 to 65.....	82,573.....	812,028.....	10·2
Over 65.....	567,660.....	1,322,696.....	38·4

Mr. Booth arrived at the results in this table by assuming that the numbers in Mr. Burt's return ought to be increased by 60 per cent. for indoor paupers, and 120 per cent. for outdoor paupers. His assumption was justified by the figures of the London parishes, which alone he had at command. Further information has convinced him that his estimate is excessive, and that the true proportion of pauperism over the age of 65 is not 38, but 25 or 26 per cent. But, even with this modification, the figures are startling enough. While only one in twenty of the population under the age of 60 is driven to poor relief, no fewer than five out of twenty above the age of 65 are compelled, in some form or other, to accept the aid of the poor law. Up to the age of 65 the working men gallantly keep up the struggle and keep clear of the relieving officer, but after that age they rapidly succumb. Sixty-five appears to be the turning-point so far as the bulk of the people are affected, but doubtless in some trades of an exceptionally unhealthy or harassing character many men are broken down even before the age of 65.

*Lord Lynton's Return.*

Many persons who in old age are obliged to fall back upon the poor law have endeavoured, by joining friendly societies, to provide for the future, and in consequence some severe reflections have been made upon these societies. The return obtained in 1891 by Lord Lynton is useful as affording an exact measure of the extent, if any, to which the failure of friendly societies may have contributed to pauperism. The total number of indoor paupers in England is about 200,000; but of that number only 14,808 had ever been members of any benefit society. Of this number the great majority, 10,215, had ceased to be members by reason of non-payment of contributions, withdrawal, or dismissal; and in the case of 4,593 the society had broken up. This amounts to little more than one out of fifty of indoor paupers, so that a very small percentage indeed of the indoor pauperism can be ascribed to the collapse of benefit societies. The fact has, however, a certain tragic interest, for it may be in their case that they had done their best to make provision for a rainy day, and, through no fault of their own, the societies failed them in their hour of need. There is a certain grim pathos in the figures which show us for how many years some of these unfortunate people had been subscribing.

Members for less than ten years.....	1,583
„ for ten and less than twenty.....	1,216
„ for twenty and less than thirty.....	955
„ for thirty years and upwards.....	814
„ for period not known.....	25
	<b>4,593</b>

*The chance of Survival.*

One of the most foolish objections to old-age pensions takes the form of an assertion that the working man so rarely lives to the advanced age that it is hardly worth while making any provision for such a contingency. The statistics of old-age pauperism lend little colour to such an assertion. No doubt the rate of mortality may run high in some few industries, and it is not possible to get satisfactory data for each separate trade. Indeed, some authorities are not satisfied with the life tables in use among insurance companies. Mr. Young, in an appendix to Mr. Wilkinson's recently published book on "Pensions and Pauperism," says he shares the opinion of Mr. Sutton, actuary to the Registrar of Friendly Societies, "that no adequate data for the probable expectation of survivance at present exist." This may be true if extreme exactness is required for actuarial calculations; but the life tables in current use may for all practical purposes be relied upon.

According to the new English Life Tables, 1871-1880, of 1,000 males, aged 25, 452 may be expected to attain 65, and of 1,000 females 520 will reach the same age.

The Odd Fellows' and Foresters' tables for working men show a higher longevity than the general population, according to Dr. Ogle's tables. This may be accounted for, partly at least, by the fact that the worst lives are rejected by the friendly societies; but, after making allowance for that circumstance, it is most improbable that the mortality in the working class would substantially exceed that of the general population.

Of 10,000 persons age 21, there will survive—

	Dr. Ogle's Tables.	Odd Fellows' Tables.
At 60 years of age.....	5,401.....	5,947.....
At 65 „.....	4,300.....	4,919.....
At 70 „.....	3,280.....	3,759.....

*Existing provisions for old age.*

As a general rule, friendly societies do not profess to make provision for old age. A few stop sick pay at 65, and make a superannuation allowance of 4s. or 5s. a week thereafter for life. A few more provide for persons who are both old and disabled. A larger number practically give old-age pensions under the name of sick relief, and thereby imperil their financial soundness, as the contributions are based on the statistics of sickness alone. Quite recently, the Manchester Unity of Odd Fellows has issued a new form of insurance for sickness to end at 65, and of pensions of 5s. a week thereafter. Many of the trades unions also provide superannuation allowances, generally only for those who are disabled after a certain age. But it remains an undoubted fact that all of such provisions extend only to a small minority of the working class, the great bulk of whom, when past work, depend upon their children, and who, if they have no friends or children to support them, go into "the house."

A writer in the *Glasgow Mail* published a series of articles towards the end of last year, giving the results of a minute and laborious inquiry into the extent of the provision made by the working classes in Glasgow against sickness and death. Authentic information of this kind is so scanty that I make no apology to the readers of the *Dispatch* for presenting them with a summary of the results of this inquiry:—

## PROVIDENT INSURANCE IN GLASGOW.

Name of Societies.	No. of Members.	Weekly Subs.	Sick, Accident, or Unemployed Allowance per week	Super-annuation Grants.	Permanently Disabled Grants.	Death.
<i>Trades Union Societies.</i>						
Associated Carpenters and Joiners.....	1,284	6d. to 8d.	8/- to 12/-	.....	£	£
Amalgamated Society of Engineers .....	2,743	1/-	10/-	7/- to 9/-	50 to 100	6 to 12
Operative Masons .....	1,500	3d.	.....	.....	50	12
Associated Iron-moulders .....	6,300	1/6	10/-	5/- to 8/-	50 to 100	10 to 30
Operative Tailors .....	1,500	7d.	10/-	4/-	.....	10
Caledonian Railway Servants .....	2,308	3d. to 6d.	8/- to 16/-	.....	.....	6 to 12
G. and S. W. Railway Servants .....	1,110	6d.	10/6	.....	.....	20
Amalgamated Soc. Carpenters and Joiners .....	851	1/-	10/- to 12/-	7/- to 8/-	100	12
Amalgamated Railway Servants.....	706	.....	10/-	.....	.....	10
Associated Blacksmiths .....	565	8d.	7/6 to 10/-	5/-	100	8
Boot and Shoe Operatives .....	706	6d.	10/-	.....	.....	5
Cabinet and Chair Makers .....	566	6d.	12/-	.....	.....	5
Alliance Cabinet-makers .....	230	6d.	12/-	.....	.....	3 to 7
Bricklayers' Trade.....	500	6d.	10/-	3/-	20	12
Amalgamated Carters .....	700	6d.	10/-	.....	.....	5
Harbour Labourers .....	750	3d.	.....	.....	.....	4
Tinplate and Metal Workers .....	600	6d.	10/-	6/- to 8/-	.....	4 to 10
Tobacco-pipe-makers.....	250	6d.	7/-	.....	.....	2 to 3
Women's Protection and Provident .....	500	2d.	5/-	.....	.....	.....
Amalgamated Sailors and Firemen .....	500	6d.	10/-	.....	.....	4
Journeyman Coopers.....	500	1/-	10/6	.....	.....	3 to 10
Upholsterers .....	150	6d.	10/- to 12/-	.....	.....	.....
North British Railway Society .....	1,000	2d. to 5d.	10/- to 17/6	.....	35 to 50	10
Operative Plumbers .....	246	6d.	10/6	.....	.....	10
	25,208					
<i>Friendly Societies.</i>						
Shepherds (Ashton Unity) .....	14,535	6d. to 8d.	12/-	.....	.....	12
St. Andrew's Order Free Gardeners .....	5,566	6d.	10/6	.....	.....	10
A.O. Foresters .....	8,216	5d. to 8d.	10/6	.....	.....	10
Irish National Foresters .....	2,455	5d. to 8d.	10/6	.....	.....	10
I.O. Oddfellows .....	4,000	5½d.	10/-	.....	.....	10
British Order of Free Gardeners .....	10,500	6d.	10/6	.....	.....	10
I.O. of Rechabites.....	2,169	4½d. to 6½d.	12/6	.....	.....	10
United Reform, Friendly.....	6,000	½d. to 2d.	5/-	.....	.....	3
A.O. of Shepherds.....	371	3½d. to 4½d.	8/-	.....	.....	7
Order of Druids .....	370	5d. to 8d.	10/6	.....	.....	10
Sons of Temperance .....	450	4d.	10/-	.....	.....	10
	54,632					
<i>Insurance Societies.</i>						
Prudential .....	145,900	1d. to 5d.	.....	.....	.....	9 to 50
Scottish Legal.....	72,810	½d. to 4½d.	.....	.....	.....	4 to 50
Refuge .....	37,680	2d.	.....	.....	.....	9
Liverpool Victoria.....	17,000	½d. to 1/-	.....	.....	.....	4 to 103
City of Glasgow .....	17,900	.....	5/- to 10/-	.....	.....	6 to 7
Royal Liver .....	17,000	½d.	.....	.....	.....	£4 15s.
British Combination .....	19,000	3d. to 9d.	2/6 to 3/3	.....	.....	10 to 50
Provident Life .....	5,000	3/5 monthly	.....	.....	.....	1,000
British Workman .....	6,000	1d.	.....	.....	.....	10
London, Edinburgh, and Glasgow .....	10,000	1d.	.....	.....	.....	10
British Legal .....	26,329	1d.	.....	.....	.....	8
	373,719					

The total population of Glasgow and district exceeds 800,000, and from the above table it appears that there are no fewer than 451,559 wage-earners insured in some society or other. The largeness of this figure indicates that a considerable number are insured in more than one. It will be observed, however, that the great bulk of the insurance is for small sums at death, mostly for burial expenses. This class absorbs 336,819 of the total. Against sickness the insured number 114,490, probably about a third of the working-men. But the total membership of all the societies which make any sort of provision for old age is only 13,059, or about 3 per cent. of the working class. The amount of the superannuation allowance is worthy of notice. The pensions vary from 3s. to 9s. a week, and the premiums from 6d. to 1s. 6d. a week. The Glasgow figures confirm the experience of other places. The great bulk of the working class insure for burial money; less than one-half insure against sickness; and, on the whole, probably fewer than 8 per cent. make any provision against old age.

It would be idle to labour a conclusion the truth of which is a matter of common knowledge. Working-men when disabled by old age are without any independent provision. The number who have secured a pension in old age is infinitesimal. On the other hand, provision for funerals is almost universal, and a number, varying between a third and a half, have secured themselves against loss by sickness. In working-class providence old age is almost a blank. How is this blank to be filled up? This is the practical question. Next week we propose to summarise the various plans that have been proposed to remedy a flagrant and notorious defect in our social life.

EARLY last year a conference was held at the House of Commons between the followers of Canon Blackley and a few members of Parliament, Mr. Chamberlain taking the chair. So much interest was manifested in the making of better provision for the old age of workmen that fresh meetings were held, until at last between eighty and ninety members of Parliament formed themselves into a committee for the discussion of the subject. In the result a general agreement was arrived at on two important points—(1) that, for the present at all events, compulsory insurance against old age was impracticable, but (2) that it was expedient that the State should encourage such provisions by contributing partly to old-age pensions. Schemes carrying out these views were submitted by Mr. Chamberlain, M.P., Mr. Rankin, M.P., Mr. Mallock, M.P., and Mr. John Lloyd, L.C.C., the hon. sec. of Canon Blackley's society. The time at the disposal of members of Parliament did not permit the detailed consideration of those schemes by the general committee, and, moreover, such a discussion would have been fruitless in the absence of skilled actuarial assistance. It was accordingly resolved that the preparation of a scheme, upon the lines laid down by the committee, should be entrusted to a committee consisting of the three gentlemen who had drawn up schemes, together with Mr. Hunter, M.P. It was an instruction to this sub-committee that they should devise a scheme that would not conflict with the work of the friendly societies, and that they should meet leading representatives of these societies in friendly conference. In accordance with this remit, the sub-committee, with actuarial aid, prepared a scheme, which was submitted last Wednesday to leading representatives of the friendly societies. This draft scheme is all but completed, and will forthwith be submitted to the general committee. Until that committee has considered the scheme, its proposals must be regarded as merely provisional.

The draft scheme provides an alternative means of insurance for old age. A person may under the plan provide for old age through the Post Office, or a friendly society, or trades union, or by any other association. If the scheme should be adopted its principal chance of success lies in its being taken up by friendly societies. The provisions under this branch vary according as a person is under or over 25 years of age at the time when the plan comes into operation. Take the case of a person under 25 by way of illustration. If one subscribes either by instalments or in a lump sum £2 10s. in the post office before he has reached 25 years of age, and if he subsequently secures a pension of not less than 2s. 6d. a week at the age of 65, from a friendly society or otherwise, he will then be entitled to an additional benefit of 2s. 6d. a week from the State. The Oddfellows' Society has published a scale of old-age pensions of 5s. a week at 65. Every person who gets such a pension will be entitled to an additional 2s. 6d. a week; and thus a small pension of 5s. a week is converted into the more satisfactory sum of 7s. 6d. a week. These are the figures in the draft scheme, but the essential principle is a moderate addition to the pension obtained through a friendly society, and it is hoped that this additional inducement may assist the friendly societies in winning adherents to these admirable provisions for old age. For those who are over the age of 25 a higher scale of pension is necessary, as fully stated in paragraph 7.

Those who are not members of friendly societies or trades unions providing old-age pensions may insure in the post office. They have a choice of making their premiums returnable or non-returnable. If they select the latter they will earn a pension of 5s. a week practically by a payment of 10s. a year from the age of 20 to 65. But the subscriber has an option—he may so insure that in the event of his death before 65 he will secure a moderate provision for his wife and family. This costs 20s. a year over a period of forty-five years. The benefits to the widow and children are considerable. For the first six months after the subscriber's death his widow will receive 5s. a week, and 2s. per week for each child, but so that the whole shall not exceed 12s. a week. At the end of six months the maximum payable to one family will be 8s. per week, and will continue at the rate of 2s. per week per child until the youngest child shall reach 12 years of age. Such a plan would provide a much-to-be-desired life insurance for the working classes. A workman would have the satisfaction of knowing that if he died in early life his children would be lifted well above the dreary level of pauperism; and, if he lived to bring up his family so that such provision was unnecessary, he would have a provision for his old age.

Such, in bare outline, are the chief features of the draft scheme; for fuller details we refer our readers to the scheme itself. Probably the feeling with which one will rise from a perusal of the scheme is one of disappointment. Is this all, it may be asked, that can be done for old age? The answer to this question is simple. It is all that can be done for the money. If Parliament is prepared for a larger expenditure on old-age pensions than is contemplated by the committee, and if this is responded to by larger contributions from the workmen, undoubtedly larger pensions can be provided. It is all a question of money.

It is probable that the friendly societies may be tempted to compete with the post office in providing temporary annuities for widows and orphan children. If so, they would deserve the same assistance and encouragement that is offered for old-age pensions. At present, however, few societies would be in a position to take advantage of such provisions. The question would doubtless be considered very carefully by any Government before finally settling the provisions of any State-aided scheme of insurance.

On reading the terms of the scheme, our readers will perceive that the State is not brought into any relation with the friendly societies, has no responsibility for them, and no claim to control arising out of the aids to pensions. A man who has made his deposit in a post office, on reaching 65 will simply present his certificate and evidence of having secured a pension elsewhere than in the post office. With the society of which he has been a member the Government will have no concern. It matters not *where* he gets his pension, it is only with the fact that he *has* secured a pension of not less than 2s. 6d. a week that the State has to deal, and the additional State pension becomes due. It would be impossible for human ingenuity to exact from such an arrangement the slightest reason for any further interference with friendly societies. Non-interference with these institutions is the principle of the following.

#### DRAFT SCHEME.

##### I.—Establishment of Fund.

A State Pension Fund to be established, to which Parliament should be asked to make an annual grant, to be supplemented by contributions from local rates.

##### II.—For Males—Money Returnable.

(a) Every male who, for the purchase of a pension under this head, shall pay £5\* to the Post Office Savings Bank before he is 25 years of age shall thereupon be credited with a further sum of £15 from the State Pension Fund; and thereafter for forty years he shall pay £1 per annum to the Post Office Savings Bank. On these forty annual sums being duly paid, and on his reaching 65 years of age, he shall be entitled to a pension of £13 per annum.

(b) If the insured person die before the third annual sum of £1 is due and paid, the sum of £5 which he deposited shall be returned to his widow or other authorised representative.

(c) If the insured person die after the third annual sum of £1 is due and paid, and before reaching 65, leaving a widow and young children, or a widow without children, or children without a widow, the widow (if any) shall receive 5s. per week for twenty-six weeks, and there shall be paid for each child under 12 years of age (if any) 2s. per week until he or she reaches the age of 12 years; but so that the total sum paid to one family shall never exceed 12s. per week during the first twenty-six week, or 8s. per week thereafter.

(d) If the insured person die after the third annual sum of £1 is due and paid, and before he reaches 65, leaving neither widow nor children, there shall be paid to his duly appointed representative the sum of five pounds (£5).

(e) Every male under 25 years of age may insure under this head for a pension larger than £13, but not exceeding £26 per annum. For each £1, over and above £5, deposited before age 25, his pension will be increased by 5s. 4d. per annum; and for each 10s. over and above £1 paid annually, between 25 and 65 years of age, his pension will be increased by £3 6s. 8d. per annum. In the event of his death before age 65, the amount of the additional deposit, or annual sums thus paid, will be returned to his widow, or authorised representative, in addition to the amount to which they would otherwise be entitled.

The returns to be made under b, c, d, and e are subject to V.—Arrears.

##### III.—For Males—Money not Returnable.

(a) Every male who, for the purchase of a pension under this head, shall deposit £2 10s. in the Post Office Savings Bank before he is 25 years of age shall thereupon be credited with a further sum of £10 from the State Pension Fund; and thereafter for forty years he shall pay 10s. per annum to the Post Office Savings Bank. On these forty annual sums being duly paid, and on his reaching 65 years of age, he shall be entitled to a pension of £13 per annum.

(b) Every male under 25 years of age may insure under this head for a pension larger than £13, but not exceeding £26, per annum. For each £1, over and above £2 10s., deposited before age 25, his pension will be increased by 11s. 8d. per annum, and for each 5s., over and above 10s., paid annually, between 25 and 65 years of age, his pension will be increased by £2 16s. 10d. per annum.

##### IV.

\*This sum may be paid in instalments as may suit the convenience of the subscriber.

*IV.—For Females—Money not Returnable.*

(a) Every female who, for the purchase of a pension under this head, shall deposit £1 10s. in the Post Office Savings Bank before she is 25 years of age shall thereupon be credited with a further sum of £8 from the State Pension Fund; and thereafter, for forty years, she shall pay 8s. 8d. per annum to the Post Office Savings Bank. On these forty annual sums being duly paid, and on her reaching 65 years of age, she shall be entitled to a pension of £7 16s. per annum.

(b) Every female under 25 years of age may insure under this head for a pension larger than £7 16s., but not exceeding £26 per annum. For each £1, over and above £1 10s., deposited before age 25, her pension will be increased by 8s. 4d. per annum, and for each 4s. 4d., over and above 8s. 8d., paid annually, between 25 and 65 years of age, her pension will be increased by £1 18s. 3d. per annum.

*V.—Arrears of Contributions.*

If the annual contribution of an insurer is not duly paid, interest at 5 per cent. per annum shall be charged thereon. An insurer may pay up his back contributions, with interest at 5 per cent. per annum, at any time within five years of their falling into arrear. But if the contributions of an insurer are in arrear for five years, he shall forfeit the deposit and contributions previously paid, and shall cease to have any claim upon the fund.

*VI.—Persons insured elsewhere than in the Post Office.*

(a) Every male who, before he is 25 years of age, shall deposit £2 10s. in the Post Office Savings Bank, and shall prove that he is insured elsewhere for a pension of not less than £6 10s., shall, on reaching 65, and on showing that such pension will be paid to him, be entitled to an additional pension of £6 10s. per annum.

(b) Females same as above, but—

	£	s.	d.
Deposit .....	1	10	0
Insured elsewhere .....	3	18	0
Additional pension .....	3	18	0

NOTE.—The credits from the State would be approximately the same as though they had insured entirely with the State Pension Fund on the non-returnable scale.

*VII.—Persons over 25 at passing of the Act.*

(a) Every male who at the passing of the Act is above the age of 25 years, and who within three years of the passing of the Act, being then under 50 years of age, shall deposit in the Post Office Savings Bank:—

£4	if he is under 30 years of age.
£5	do 35 do
£6	do 40 do
£8	do 45 do
£10	do 50 do

and shall prove that he is insured in the Post Office or elsewhere for a pension of not less than £6 10s. per annum, shall, on reaching 65, and on showing that such pension will be paid to him, be entitled to an additional pension of £6 10s. per annum.

(b) Females same as males, but—

£3	if under 30 years of age.
£4	do 35 do
£5	do 40 do
£6	do 45 do
£7 10s.	do 50 do

and

Insured elsewhere .....	£3 18s.
Additional pension .....	£3 18s.

*VIII.—Persons in the employment of the Government.*

All persons in the employment of the Government must open a State Pension Account as a condition of their employment. Where such persons are entitled under existing conditions to superannuation allowance, the Government may pay the subscriptions for their State pension and deduct the amount of the pension from the superannuation allowance to which they would otherwise be entitled.

*IX.—Persons employed by Firms, Individuals, or Institutions.*

All employers of labour—whether firms, individuals, or institutions—may open State Pension Accounts for any of the persons employed by them; and, in the event of any such person leaving their employment before the period at which the pension falls due, may transfer the amount standing to the credit of any such person to any other person in their employment. If the transferee is not of the same age as the original holder of the pension claim, the amount to his credit may be made up to what it would have been if he had been an original subscriber; or he may be held entitled to a pension proportionate to the amount transferred to his credit and having regard to his age at the time of transfer.

*X.—No power of assignment.*

No person shall have power to assign or alienate his pension.

*XI.—Payment by a lump sum.*

Persons desiring to provide for their pensions by payment of a lump sum, in place of an annual contribution, shall be permitted to do so at any age according to a table to be prepared.

**CONCLUSION—COMPULSORY OLD-AGE INSURANCE.**

It is truly said that no voluntary pension scheme will ever secure a provision for all the aged poor; and, indeed, no such plan could be expected to affect more than a minority of the working-class. If we may form an estimate from Mr. Charles Booth's Census of the Poor in London, we may well believe that about 30 per cent. of the population have earnings too small or too precarious to admit of the long-sustained effort that is required to secure even a very moderate old-age pension. About one-fifth of the population are in circumstances so comfortable that a pension scheme, such as that described in last week's *Dispatch*, would have no attractions for them. We may thus at once rule out half the adult population as being unlikely to avail themselves of any insurance for pensions, whether State-aided or not. Still, in the remaining half of the population a vast field is open for enterprise which, up to the present time, is hardly touched by any existing agencies. To what extent, without compulsion, that large class could be induced to make provision for old age is a question that cannot be satisfactorily answered without trial.

Much of the disappointment that is naturally felt in dealing with voluntary schemes of insurance arises from too ambitious desires. No voluntary scheme could be expected to rid us of old-age pauperism, and it must attain a great success before it could make even an appreciable impression on it. The persons who have the foresight and self-denial to provide for the future are least likely, under any circumstances, to come upon the poor-rate, and the class of persons that furnish the bulk of the recruits to the ranks of pauperism are precisely the unthrifty and self-indulgent. To some extent, of course, every old-age pension that is taken up takes away a possible inmate of the workhouse, but no prudent advocate of a voluntary scheme would rest his case upon the hope of abolishing old-age pauperism.

The weak point again of every voluntary scheme lies in the lifelong and continuous effort which it demands of the workman. The choice is between a heavy payment over a short period in early youth, and small instalments covering the whole period from 20 to 65. If the latter course is preferred, a man may secure a pension on the non-returnable scale of 5s. a week at 65 for a weekly payment of 2½d. If he desires also to insure for 2s. a week for each of his children on his death the weekly contribution would be 4½d. It would be idle to say, at all events of the great majority of the working-classes, that they would not pay 2½d. or even 4½d. a week. When fully employed, they could well afford the

the money; but when sickness comes, or loss of employment, they fall into arrears, and if their wages are low, it may require a heroic effort to recover the lost ground. When payments are to be made not weekly but quarterly or half-yearly, the tendency is strong to put off the saving until the day of payment comes near; then occasionally the workman will find himself short of cash, and the opportunity will be lost. Some external pressure would seem to be necessary to keep him up to the mark, and to ensure the due performance of his good intentions.

Such considerations have led many to believe not only that compulsion is necessary if any general provision for old age is to be secured, but that a voluntary scheme is so little likely to succeed as hardly to be worth a trial. It is, however, unnecessary to discuss the desirability of compulsion, as there is a prior question that must be answered. How is compulsion to be carried out? Is it practicable?

*Canon Blackley's Compulsory Scheme.*

The first plan that seems to have occurred to Canon Blackley, who may in England be described as the father of compulsory insurance, was to impose upon everybody, rich and poor, male and female, an obligation to pay a sum of £10 into the Post Office before they reached the age of 21. This scheme did not find favour with the Committee of the House of Commons that sat in 1885-87. How could such an obligation be enforced? Canon Blackley invoked the aid of the employers, who might be made to answer for their workmen. But this plan must be futile unless the employers were to refuse work to those who could not prove that they were insured. Neither employers nor workmen would be grateful to a Government that added this new clause of conflict to all their existing sources of embarrassment. We find it very hard to compel parents to send their children to school; but the inspectors have an easy means of proving the violation of the law when they find the children in the streets and not in the schools. But whether a man has paid his insurance or not is a secret in his own bosom, and could not be extracted from him without the application of inquisitorial methods, to which the British working-man could not easily be subdued. Moreover, the cost of compulsion of the kind that found favour with Canon Blackley would be enormous. The scheme falls between two stools. If such compulsion were not enforced by a very costly process it would be quite ineffective; if it were made effective the cost would render the scheme insolvent.

*The German Form of Compulsion.*

The Germans have adopted a system of compulsion which is relatively both cheap and effective. No obligation is imposed on the workman at all; but his employer is compelled to pay a weekly sum for insurance against old age, and is allowed to deduct half the amount from the wages of the workman. It is possible to get at the employers, although it is not practicable to compel the workmen. But, of course, only those workmen in regular employment can be brought within the operation of the law. The German scheme of compulsion is not universal; it fails to make provision for the most difficult case of all—the casual labourer. It is more comprehensive than a voluntary scheme, but it is not all-embracing.

Recent information from some parts of Germany shows that the machinery of the law is yet far from perfect. The system is cheap and ingenious. Each workman has to take out an insurance card, on which there are forty-seven squares, representing forty-seven weeks in a year. Each week as his wages are paid the employer is bound to put on a stamp of the proper value representing the workman's weekly contribution to the Old-age Pension Fund. But those cards are liable to be lost, and the workman is put to great trouble when he shifts about seeking work. Besides, his employer can tell from the state of a card whether the workman has been regularly employed, and it is complained that workmen who have been out on strike are detected and refused employment. However that may be, it must be admitted that the German system is still on its trial. The experience of the next few years will be decisive one way or the other, and, in the meantime, there would be no chance of inducing the House of Commons to anticipate the result in Germany and start such a system here. If after a full trial the German system is found to work smoothly and satisfactorily, it may find advocates in this country; but, for the present, it may be regarded as outside practical politics.

*Pensions out of the Rates.*

To those who are familiar with the difficulties of providing for old age by means of provident institutions, whether compulsory or voluntary, it is not surprising that a proposal should be made to meet the wants of the workmen, when disabled by age, either by a modification of the poor law or by the bold course of offering a pension of 5s. a week to every man or woman of the age of 65, regardless of their circumstances. The support recently extended to universal pensions for old age by a writer so well informed and so remarkable for the sobriety and moderation of his views as Mr. Charles Booth, must prevent anyone who felt so inclined from dismissing the idea as chimerical and extravagant. The advantages of the scheme lie on the surface. It provides for the poorest class, and it wipes out a big branch of the poor law.

The real difficulty is the cost. A pension scheme on the modest scale of 5s. a week, beginning at sixty-five, would cost twenty-four millions of pounds a year; if the age were reduced to 60, it would cost nearly thirty-six millions a year. Suppose we started with the more limited scheme, could the hard-and-fast line of 65 be maintained? Every relaxation would involve a very large increase of taxation. Is the British taxpayer likely to face the enormous cost which even so moderate a pension as 5s., beginning at so late a period as 65 would necessarily involve? The cheapest way of raising the money, so far as the workman is concerned, would be by a national poor-rate. That would amount to 2s. in the £. What chance is there that the ratepayers, who can with great difficulty be persuaded to pay 1d. in the £ for public libraries, will welcome 2s. in the £ for old-age pensions?

In this matter of rates a broad distinction must be drawn between England and Scotland. In England the occupier pays the whole rate, in Scotland he pays half. In Scotland the working-class would get a very cheap and effective insurance out of the rates. If we suppose that in Scotland a national pension rate were raised to provide—(1) 5s. a week for every man and woman of the age of 65; (2) in case of workman's death, 2s. per week for each of his children up to the age of 12—how much would it cost? The maximum expenditure would be about £3,400,000 a year, which is at present nearly the amount of the whole local taxation of Scotland. But there would be a saving on the poor-rate, amounting perhaps to £400,000 a year, and a considerable number, say 6 or 7 per cent., of the population, would not undergo the troublesome forms necessary to be observed with a universal pension scheme. We may put that conjecturally at £200,000, so that the net and clear addition to existing local taxation would be £2,800,000 a year. This amounts to additional local taxation at the rate of 2s. 4d. in the £.

These figures are, in a sense, appalling, but the curious point, when we look into the matter closely, is that they have no terrors for the working man. The scheme of the House of Commons Committee, which provides 5s. a week in old age and 2s. per child if the workman dies, would cost 20s. a year, even with the help of a contribution from the Government of half a million a year. That sum the workman must pay with undeviating punctuality for forty-five years of his life. But if the same benefits were obtained from the rates the Scotch working-man would pay from 3s. 6d. to 14s. a year, according to his rent; the average would be about 7s. a year, as against 20s. under the voluntary scheme. A workman as occupier would pay 1s. 2d. in the £ if the whole rate were 2s. 4d. in the £. His rent varies from £3 up to £12 a year. The premium he would pay would vary with his rent, as in the following table:—

Annual rent.	Cost out of Rates.	Cost of Voluntary Scheme.
	s. d.	
£3 .....	3 6	20s. for 45 years.
4 .....	4 8	20s. "
5 .....	5 10	20s. "
6 .....	7 0	20s. "
7 .....	8 2	20s. "
8 .....	9 4	20s. "
9 .....	10 6	20s. "
10 .....	11 8	20s. "
11 .....	12 10	20s. "
12 .....	14 9	20s. "

If everybody were to be pensioned out of the rates the workman would get off cheap. Even if he were at the top of the tree, and lived in a £12 house, he would only pay 14s. as against 20s. for the voluntary scheme. He pays according to his means. But the richer ratepayers would suffer. Thus the occupier and owner of a house of £150 rental would pay annually towards the pension fund no less a sum than £17 10s., although he would not be likely to claim a pension in his old

old age. The working class, however, would not on the whole pay more than one-third of the premium required by a State-aided voluntary scheme. No fewer than 73 per cent. of the Scotch people live in houses not exceeding £10; they would supply the bulk of the pensioners, and on the average it would cost them only 6s. 5d. a year.

The financial objection to Mr. Booth's scheme, so far as Scotland is concerned, does not touch the working man; but for that reason it is all the more formidable in the eyes of the well-to-do classes. Only 16 per cent. of the Scotch people can afford to live in houses exceeding £15 rental, and all ratepayers under that figure would gain by charging the pensions on the rates; and it is true, of course, that eighty-four votes outweigh sixteen; but it would be rash to assume that a pension scheme out of the rates is within the domain of practical politics. The 16 per cent. would make the earth tremble with their cries, and most of the people who have everything to gain would probably join in with them. It is almost impossible to get the mass of the population to understand any question that involves finance. Their confidence in the rules of arithmetic would be put to a severe test. Although the workman pays so small a portion of the rates that he would get in benefits about twelve times the value of his subscriptions, yet the repugnance to a rate of 1s. 2d. would probably be fatal to Mr. Booth's scheme. A voluntary scheme is much less efficient and far more expensive to the workman, but, in spite of that, it is more likely to be adopted.

## K 2.

[To evidence of *W. F. Schey, Esq., M.P.*]

### THE OLD-AGE HOMES IN AUSTRIA.

In the Spitalgasse, in Vienna, about a mile perhaps from the Ring, stands a great yellow building. There is no architectural beauty about the place. Artists shake their heads sorrowfully when its name is mentioned. But it has a solid, well-built look, which promises much in the way of comfort for those who live there. It is in the very healthiest part of the city, too, and is a perfect model of cleanliness and order. Its windows are quite dazzling in their brightness, while as for its walls, they are painted and washed more often than those of the Burg. The house is built round a great courtyard, and abuts on the side remote from the street on one of the most beautiful gardens in all Vienna. It is a real old-fashioned garden, with sweet-smelling herbs and shrubs, and great trees that look as if they had been standing there for centuries.

This house is evidently a popular resort. Even in the morning many a visitor makes his way thither, and on fine afternoons the garden is often quite crowded. Young men and women stroll in when their day's work is done, and husbands and wives with their children. Sometimes a bridal party or a christening party may be seen there, in all their finery, just as they have left the church. Sometimes, too, sad little groups in deep mourning. The place is a sort of general rendezvous, in fact, where the old and the young meet together to talk things over. Not that it stands open to all the world—it is only the friends and relatives of those who live there who are admitted. Still, whether or not they ever cross the threshold, the poor of Vienna all look upon this building as their own special property, and take quite a special pride in its well-kept air. The veriest Ishmael among them, even when things are at the worst with him, never thinks of grudging its inmates their comfort. For it is an Old-age Home, one of the six great refuges which Vienna provides for her worn-out workers.

These Old-age Homes are an institution peculiar to Austria, one that dates back to very early days. The first of them, the Langhaus, as it was called, was built in the thirteenth century by the citizens of Vienna. Here old men and women who had no means wherewith to support themselves were lodged and provided with lights and fuel. They were dependent for their food on chance charity, but they do not seem on that account to have fared the worse, for we are told expressly that "every day without exception, they had wine with their dinner and beer in an evening." The Court, when in residence, used to send them dainties of all kinds, and the great nobles would give them a buck, or a few sheep from time to time. It was the custom, too, on high holidays—this is very characteristic of Vienna—for the rich citizens and their wives to pay visits to the poor old folk and make them presents.

The Langhaus was destroyed by the Turks in 1529; but before long another home was built in the St. Marx district, and in this between 500 and 600 old people were not only housed but boarded. During the seventeenth century several institutions of a similar kind were founded.

As times passed, the Old-age Homes lost, unfortunately, much of their distinctive character, and were often used as hospitals, and even as orphan asylums. The Emperor Josef the Second, however, speedily put an end to this state of things, for if there was one work of social reform he had more at heart than another it was that of bettering the condition of the aged poor. He was one of the first formally to enunciate the doctrine that a man who has worked in the days of his strength has the right to be supported by his fellows when old age comes upon him. By the Poor Law which he drew up for his subjects, it is enacted that any person who is destitute may, at the age of 60, claim from his commune either his free board and lodging or a pension equal in amount to one-third of his previous annual average earnings. And this was to be granted to him, not as a favour or as a charity, but as a right. The Vienna Poor Law regulations of to-day, in so far as they relate to the treatment of the aged, are founded on this statute.

All persons who have a right of settlement in Vienna, *i.e.*, about 36 per cent. of the inhabitants, may, on or after their sixtieth birthday, claim either a pension, or admission to an old-age home, always providing they cannot support themselves, and have no relatives who are bound legally to support them. As, however, there is room in these institutions for only some 4,600 persons, and there are usually more than four times that number who wish to live there—the pensions are now miserably small—the Poor-Law authorities are vested with a certain discretionary power in deciding who shall, and who shall not, be admitted. And so far as possible the preference is given to persons of good characters, to those whose destitution is the result of their misfortune, not their heedlessness or extravagance. The great majority of the inmates of these homes, therefore, belong to the respectable poor class. Thus no disgrace is attached to going there—an Austrian would no more think of being ashamed that his father was in an Old-age Home than an Englishman would that his had rooms in Hampton Court. One reason why old people in England dread going to the workhouse is the knowledge that, when they have once crossed its threshold, they will be regarded as pariahs even by their nearest relatives.

Only two of the six Old-age Homes belonging to Vienna are in the city itself; the others are at some little distance away—in the country. One is at Liesing, another at St. Andrä, another again at Ybbs, and the fourth at Mauerbach. They are all in healthy localities, however, and are fine buildings with gardens. The cost of the Home in the Währingerstrasse, which is reserved exclusively for freemen of the city, and their wives and daughters, is defrayed out of the Burgerfond, *i.e.*, the income derived from money and land bequeathed by the charitable as a provision for poor citizens of Vienna. The other homes are supported out of the ordinary poor relief fund, supplemented when necessary by special grants voted by the municipality. The head of the Poor Law Department is responsible for the management of them to Burgomaster, as the representative of the city. Roughly speaking, these institutions are all organised in the same way as the one in the Spitalgasse, although in the Freeman's Home the arrangements are on a somewhat more generous scale.

Each wing of the Spitalgasse Home is divided into number of large, lofty rooms, opening on to a long corridor. There are from ten to twenty beds in a room, and very comfortable beds they are, with plenty of warm coverlets. By each of them is a sort of what-not, with a cupboard on one side for clothes and shelves on the other, and there are chairs and tables standing about. In spite of the long row of beds there is something home-like about the place, owing in some degree at least, to the fact that the old people are allowed to take with them there some few of their own belongings. It may be only a portrait or two, a footstool, or a few books, or even a monstrosity in the form of wax flowers; but almost every inmate has some little treasure or other, which it would have cost him a pang to part with. Then in summer the rooms are gay with flowers—there are plants raised perhaps with infinite pains in some poor attic, and little posies which have evidently been gathered in the Prater. Canaries and thrushes, too, are in some parts of the house, though only there on sufferance. Should their singing be objected to, they must be reduced to silence or banished—for in the Old-age Homes there is an inexorable law in force—no one person or his belongings shall interfere with the comfort of another.

The corridors, which are furnished with comfortable settees, are well warmed in winter and serve as general sitting-rooms. Here, when it is too cold to be out of doors, the old men bring their pipes and the old women their knitting, and there is much talk and cackling and comparing of notes. Politics are warmly discussed sometimes, and Ministers are weighed in the balance and found wanting. All the latest telegrams are read aloud, on the very day they are issued, too, for these Austrian paupers are not dependent on chance passers-by for their journals. They club together—English guardians will be startled to hear of paupers having anything wherewith to club—and subscribe for daily papers, one for each corridor; and these they receive just as regularly and as punctually as if they were archdukes. "It would never do, you see," an old man informed me gravely, in his quaint Wiener dialect, "for us not to keep up with what is going on in the world. These are stirring times." Although

Although the corridors throughout the house are regarded as the common property of the two, all the women—wives as well as widows and spinsters—have their rooms in a wing of the building quite separated from that in which the men have theirs. In view of certain discussions which have been raised in England of late, one of the inmates was asked if he did not think it rather hard that he and his wife should be thus kept apart in their old age. "Kept apart?" he replied, with an odd puzzled look on his wrinkled old face. "We are none kept apart. Why, I see a lot more of the old woman now than I ever did in my life before. She's about here from morning till night, as often as not. *Blauer Himmel!* if that's not enough!"

The commissariat of this Spitalgasse Home is organised on very original lines. The Poor Law Department, instead of providing the inmates with food, allows them to buy it for themselves, and gives to each of them for this purpose 26 kreuzers (about 5d. a day). To secure them from exploitation, an arrangement is in force by which a professional caterer undertakes to keep for their benefit a restaurant in the home itself. This restaurant is under strict surveillance, a committee appointed by the Department deciding what kinds of food are to be provided, and at what price. The old people, however, are under no obligation to go there; they are perfectly free to have their meals elsewhere if they choose, but this they rarely do, except it is as guests, for nowhere else can they obtain such good value for their money. The marvel is, indeed, than any caterer can be found willing to supply good food, and good it certainly is, at the price at which it is sold in the home restaurant. I subjoin the bill of fare for the able-bodied; there is another much more elaborate and varied for the invalids.

And before any of these dishes may be served, the director of the home and one of the doctors must certify that its ingredients are of excellent quality, and that it is well cooked.

There is nothing in the appearance of this pauper restaurant to distinguish it from those which artisans and members of the lower middle class frequent. It is a large comfortable room, furnished with a number of chairs and little round tables, and everything about it is scrupulously clean. Within certain limits, its clients may choose their own hours for their meals, but breakfasts are not served after 9 o'clock, dinners only between 11 and 2, and no one is allowed to linger over his supper later than 8 o'clock in winter, or 9 in summer. They make their way to their dinners in twos and threes, as a rule—a husband and wife, perhaps, and a friend. They choose their table, and then settle themselves down to a careful consideration of the *menu*. The relative merits of soups and puddings are anxiously balanced, and much heart-searching is gone through as to whether a cup of coffee at 3 kreuzers or a glass of wine at 4 is the better worth having. When they have made up their minds on these cognate points, they give their orders, and with quite a lordly air too, as befits persons who have money in hand to pay for what they wish. The choosing and ordering of their own dinners is to most of these old people a source of intense delight; the mere fact of having money to spend gives them a feeling of independence and self-importance which lightens many a burden they have to bear. If the Poor Law Department were to offer them regular board, with three luxurious meals a day, instead of their meagre little 26 kreuzers, the majority of them would certainly reject it with scorn.

These little allowances are valued, too, for another reason: they are a proof of trustworthiness on the part of those who receive them. When a man enters an Old-age Home, his twenty-six kreuzers a day are handed to him as a matter of course. If, however, as sometimes happens, he does not turn them to good account—if, for instance, he spends an undue proportion of them on tobacco, beer, or wine—it is pointed out to him that such conduct cannot be tolerated. Should he not take the hint thus given, he receives an official warning. Then, unless he mend his ways, and that speedily, his kreuzers are stopped, and he is placed on rations. Invalids, too, and the feeble-minded, have no allowances. Their meals are ordered for them by the doctor, and are sent from the restaurant to their own rooms.

Those responsible for the management of the Old-age Homes have decided the clothes question in an eminently common-sense fashion. Such of the old people who have clothes of their own, or have friends willing to provide them with clothes, wear them, while the less fortunate are supplied by the Poor Law Department with what they require. In the latter case, the dress, though as plain as possible, is warm and comfortable, and of the kind worn by the artisan class—of grey or brown homespun, or dark-coloured serge. It is not uniform; indeed, as it is made in the building, it is exceedingly probable that they who wear it—at least, if they be women—have a voice in deciding its *facon*. With the exception of the invalids, all are required to keep their clothes in good repair, and to pay a certain amount of attention to their own personal appearance. These are points which, especially in Vienna, are strongly insisted upon, for the city does not choose to have its old pensioners going about dirty or in rags. The hall-porter has strict orders to allow no one to go out until he has "tidied up," and this regulation is strongly approved of by the majority of the inmates themselves. To an outsider it certainly seems superfluous, for most of the old people are the very picture of neatness. They all appear to have a good supply of clothes. One of the inmates of the Prague Home insisted on showing me his wardrobe. In addition to the rough grey suit he was wearing, he had a pair of dark trousers and waistcoat, a black coat, and a long blue overcoat—all in thoroughly good condition. He had, too, under his care a silk gown, which he displayed with infinite pride. It was his wife's wedding-dress, he told me. His wife, who lives in another wing of the building, had, it seems, handed it over to him for greater safety. "She always wears it, though, of course, when we pay visits," he remarked incidentally. One of the laundry regulations of the homes sounds in English ears as a sorry jest; yet, perhaps, after all, it has its *raison d'être*. The inmates are warned that it is only their bed-linen and clothes that are washed free of charge, not their *putzwäsche*, i.e., lace, frills, and furbelows.

Many of the inmates of these homes supplement their 26 kreuzers a day by earning a little money on their own account, and the Poor Law authorities, far from throwing obstacles in the way of their doing so, give them every encouragement. They even provide work for such of the more worthy among them as have the strength, and the wish to do it; and, what is still more remarkable, they pay them regular wages. It is not much that they give, of course, only some 10 kreuzers for a six hours' day; still, even 10 kreuzers are not to be despised. There is many an old man in our English Unions who would gladly work all day for half that sum if he might but spend it as he chose. The pensioners receive no remuneration for doing the lighter kind of house-work, such as making their own beds, and keeping their rooms clean; this they are required to do, so long at least as they have the necessary strength. But, when there is any carpentering to be done, the carpenters in the home have the option of doing it; and the same arrangement is in force with regard to the dressmaking, tailoring, shoemaking, &c. While all are free to turn their hands to gardening and wood-chopping. And for this work they are paid. Some of the women, too, earn quite a tidy little, some by knitting stockings and vests, and helping to keep the house-linen in repair. Then such of the old people as are specially reliable may become the paid officials of the institution. Attached to each room is a stove-vater, or a stove-mutter, as the case may be, who receives 6 kreuzers a day for keeping order, and seeing that they who live there conduct themselves properly. If any one is ill it is the duty of these officials to fetch what food or medicine he may require, and to look after him generally, and try to make him comfortable. In the room set apart for individuals the stove-vaters or stove-mutters are replaced by nurses. Even they, who, from lack of strength or inclination, do not work, are not, as a rule, entirely dependent for their support on their 26 kreuzers; for whatever presents they receive, whether in money or in kind, are their own private property. And their visitors rarely go empty-handed. The roughest of the rough likes to take his old father at least a bit of tobacco when he drops in to see him, and there is no end of the mysterious-looking packages with which daughters are laden when they arrive. One rule, however, is rigidly enforced, no spirit is allowed to be taken into the homes.

In all these institutions, except the one in Mauerbach, the discipline in force is of the very gentlest character. Practically, the inmates may do just as they like, so long as they conduct themselves in an orderly fashion, and do not quarrel. When once they have made their rooms neat, they may lounge about in the sunshine, or by the stove, the whole day long if they choose. After dinner they may all go to bed for an hour, and this many of them do. In each home there is a chapel where mass is celebrated every day, but the old people are perfectly free to go there or not, just as the fancy takes them. If they care to do so they may leave the home every day at 1 o'clock, and need not return until 8 in the evening. Then they have the right to spend one whole day with their friends every week, and if they wish to spend two the Director rarely or never refuses them the permission. Once a year, too, they may go away for a whole month, providing that they have anywhere to go to. Some of them pay quite a string of visits during the summer, and return to the home all the better and more contented for the change. These privileges, however, are strictly conditional on good behaviour. Should any of the pensioners show a disposition to abuse their liberty, it is at once curtailed. If a man or woman does not return to the home by the appointed time, or if he returns in a disorderly condition, he is not allowed to go out again for some time to come, nor may he undertake any paid work. If he should stir up strife among his fellows, or in any other way interfere with the well-being of those around him, he is subject to imprisonment in a room in the home, though for not more than forty-eight hours. The persistently insubordinate or unruly, however, are not allowed to remain in the ordinary homes, but are sent to Mauerbach, where, though only in one wing of the building, a somewhat sterner régime prevails.

Each Old-age Home is under the management of a resident director, who must render an account of all that passes there to the head of the Poor Law Department. This director, however, is only a constitutional ruler. His authority, though considerable, is strictly limited. Once a month in each home the officials, the clergyman, the doctors, and a representative of the Poor Law Department, sit in a conference, and the inmates are invited to appear before them and make known their wishes and their grievances. A full report of the proceedings upon these occasions must be submitted to the head of the Department. Not very long ago there was an odd little scene in one of the homes. Some dozen old women were interviewing the director for the purpose of inducing him to let them stay where they were, whereas he had received orders to send them to a home further from Vienna. One might have thought from the tone some of them assumed, that he was an unreasonable landlord, and they tenants, whom, in defiance of the law, he was seeking to evict. The director's manner, meanwhile, was deprecativo in the extreme. He spent a good half-hour in soothing the old dames, and striving to convince them, that even down in the country, life might be well worth living. It would be difficult to find a more contented set of old people than those who live in these Austrian homes. There are grumblers among them, of course. One of them complained bitterly to me that, although 26 kreuzers a day might be enough for bare necessities, they left nothing whatever for luxuries. Another—it was in Prague—replied to a chance remark that he seemed fairly comfortable, by a very emphatic shake of the head. He was well cared for, he allowed, and the food was good; but—he gave a significant glance at a little group of old men who were laughing and talking in the corridor, "They are all Czechs, you know," he whispered, in the tone in which a Southern State planter might in other days have spoken of negroes, "and for a German to have Czechs around him is really very trying." These, however, are exceptional cases; the majority of inmates seem to be as happy as they can be whose lives lie behind them, not before. There is not a touch of that dull listlessness about them, of that just-waiting-for-death, which is so marked a characteristic of the old people in our workhouses. On the contrary, they are quite alert, and take a lively interest, not only in what is going on around them, but in things in general. This is especially the case in Prague. An English visitor who chanced to be there a few months ago, was quite overwhelmed with questions as to how affairs are managed in this country. Some of the old folk were very curious to know how the poor were treated here, and they were not a little scandalised when they heard of one of our social arrangements. "To think of sending worn-out workers to live in the same house as rogues and vagabonds!" they exclaimed in evident amazement at such barbarous ways. One old man inquired anxiously how the word "Gladstone" ought to be pronounced.

These Old-age Homes have no claim to rank as an ideal institution—in more than one respect they are open to improvement. For instance, a little more care might, with advantage, be taken in discriminating between the applicants for admission. It would be well if proofs, not only of respectability, but of thrift, were insisted upon from all who find a refuge in the homes. If such of the inmates, too, as are incurably ill were lodged quite apart from the others, in a house of their own, it would add considerably to the general comfort. Then, according to our English notions, the apartments are too large. We should like to see those long dormitories replaced by a series of comfortable little rooms just large enough for two persons to live in. These, however, are mere questions of detail, and as for the main lines on which the homes are organised, they certainly are admirable. The Australian Poor Law authorities recognise the fact, and herein show their wisdom, that as a man is at 60, so he will remain until the end. They, therefore, waste no time on a vain endeavour to induce their proteges in the Old-age Homes to reform their ways; all they try to do is to keep them out of the reach of harm, and make them as happy and comfortable as possible. And in this, as we have seen, they succeed—succeed, too, without any lavish expenditure of money. It is noteworthy that the very arrangements which contribute most to the comfort of these old Austrians involve no outlay whatever. The little dinners over which the inmates of the Old-age Homes linger with such keen enjoyment do not cost more than the mid-day meals supplied in our workhouses. Workmen's ordinary clothes are not one whit more expensive than uniform, nor does the fact of paupers being allowed to see their friends every day entail any sacrifice on ratepayers. In the Vienna Old-age Homes the average cost per head is 57 kreuzers (about 11d.) a day. In the London workhouses it is some 1s. 4½d. Still it is not without reason, it must be admitted, that rigid economists look somewhat askance on these homes; for the respectable poor, when their working days are over, go there gladly. Old men and women have been known to die of slow starvation rather than enter a workhouse.

EDITH SELLERS.

	Half portions, weight or measure.	Price.	Whole portions, weight or measure.	Price.
		kr.*		kr.
"Einbrenn" soup.....	.....	.....	$\frac{1}{2}$ pint	2
Clear soup.....	.....	.....	$\frac{1}{2}$ "	1
Clear soup, with breadcrumbs.....	.....	.....	$\frac{1}{2}$ "	2
Soup, with rice, &c.....	.....	.....	$\frac{1}{2}$ "	2
Soup, with rice, minced beef, &c.....	.....	.....	$\frac{1}{2}$ "	4
Beef, cooked and without bones.....	2·8 oz.	5	3·9 oz.	7
Corn beef, with sauce.....	.....	.....	4½ "	5
"Beuschl".....	.....	.....	$\frac{1}{2}$ pint	5
Roast veal, lamb, or pork.....	3½ oz.	10	5½ oz.	16
Smoked beef.....	.....	.....	2 "	6
Potatoes, cabbage, turnips, &c.....	.....	.....	$\frac{1}{2}$ pint	2
Peas, &c.....	.....	.....	$\frac{1}{2}$ "	3
Milk puddings.....	$\frac{1}{2}$ pint	3	$\frac{1}{2}$ "	4
Nudclu.....	$\frac{1}{2}$ "	3	$\frac{1}{2}$ "	4
Boiled puddings.....	2 oz.	1	4½ oz.	2
Old white wine.....	·22 pint	4	·44 pint	8
Red wine.....	·22 "	6	·44 "	12
Beer.....	$\frac{1}{2}$ "	4	·88 "	6
Milk.....	.....	.....	$\frac{1}{2}$ "	3
Coffee.....	$\frac{1}{2}$ pint	3	$\frac{1}{2}$ "	5

\* Five kreuzers are equal to about 1d.

## K 3.

[To evidence of W. F. Schey, Esq., M.P.]

A BILL to stimulate and encourage thrift and self-help with a view of making competent provision for old age and for other purposes connected therewith.

WHEREAS it is considered that it will be of advantage to stimulate and encourage thrift and self-help with the view making competent provision for old age: Be it enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Legislative Council and Legislative Assembly of New South Wales in Parliament assembled, and by the authority of the same as follows:—

1. This Act may be called and may be cited as "The Old-age Provision Act," and shall come into force on the first day of January, 1897.

2. In the construction of this Act—

"Old Age" shall mean the age of sixty years and upwards; and

"Friendly Society" shall mean any Benefit Society established, or hereafter to be established, in New South Wales in accordance with the law in such case made and provided by the Legislature of this Colony.

3. Every Friendly Society which includes, or shall hereafter include, amongst its benefits an "Old-age provision fund" shall be entitled to all the benefits and advantages conferred by this Act.

4.

4. Every such Friendly Society which has, or shall hereafter establish, amongst its benefits an "Old-age provision fund," shall have full power to regulate the amount of subscription of each member according to age, as well as the times at which such subscriptions shall be paid, which payments shall be continued regularly up to the age of sixty years and no longer, as well as the weekly amount thereafter to be paid out of such "Old-age provision fund" to each and every subscribing member who shall have attained the said age of sixty years. Provided always that such payments shall be made once in every two weeks.

5. Every Friendly Society that has established, or shall hereafter establish, an "Old-age provision fund," shall be entitled to a subsidy of one pound, to be paid out of the Consolidated Revenue of the Colony, for every pound subscribed by the members of such Friendly Society towards such "Old-age provision fund."

6. All subscriptions paid by each and every member of such Friendly Societies into and for the purpose of any such "Old-age provision fund," together with the beforenamed subsidy of pound for pound, to be paid out of the Consolidated Revenue of the Colony, shall be invested in the Savings Bank of New South Wales under the head of "Old-age provision fund" with the name of the particular society attached, and in the names of two officers appointed by the Colonial Treasurer of New South Wales, as well as in the names of any two officers appointed by each such Friendly Society.

7. There shall be an audit by a special officer appointed for such purpose by the Auditor-General of New South Wales once in each and every month of all such funds as are invested in the Savings Bank of New South Wales, in the name and under the head of "Old-age Provision Fund."

8. In case any beneficiary should die before reaching the prescribed age of 60 years all subscriptions paid by him or her into the "Old-age Provision Fund" in connection with a Friendly Society of which he or she was a subscribing member, at the time of his or her death, together with interest for one year on the whole amount subscribed, at the rate of 5 per cent. per annum, shall be paid to his or her next-of-kin, or whomsoever by his or her last will and testament he or she shall appoint.

9. In case of no next-of-kin, or on failure of such appointment, the total amount of subscriptions paid by such member shall be paid into the "Old-age Provision Fund" established by such friendly society of which he or she was a member, for the benefit of the then existing members, and those who may thereafter join the same, collectively.

10. Every subscriber to the "Old-age Provision Fund" which has been established, or may hereafter be established by any friendly society, shall be entitled, on attaining the age of 60 years, to receive the minimum sum of one pound per week for each and every week, so long as such subscribing member shall live.

11. The said subsidy of pound for pound to be paid out of the Consolidated Revenue, shall be paid monthly into the Savings Bank of New South Wales not later than the tenth day from the beginning of each calendar month.

## L.

[Appended by the Committee on Old-age Pensions, 8 August, 1896.]

Adelaide Racing Club, Austral Chambers, 18, Currie-street, Adelaide, 31 August, 1896.

E. W. O'Sullivan, Chairman, Select Committee, Old-age Pensions, Sydney, N.S.W.—

Dear Sir,

In answer to your letter of the 6th instant I have pleasure in forwarding you the desired information, as follows:—

Date of Meeting.	Total.	Commission (total amount retained by Club towards stakes).	Fractions.
	£ s. d.	£ s. d.	£ s. d.
28 December, 1895 .....	7,186 10 0	538 19 9	35 13 9
1 February, 1896.....	7,182 10 0	538 13 9	27 16 3
23 May, 1896.....	14,677 0 0	1,100 15 6	56 7 0
25 May, 1896.....	18,776 0 0	1,408 4 0	83 5 0
30 May, 1896.....	16,633 0 0	1,247 9 6	52 6 0
15 August, 1896 .....	10,383 10 0	778 15 3	52 0 3
22 August, 1896 .....	10,875 0 0	815 12 6	60 13 6
	£85,713 10 0	£6,428 10 3	£368 1 9

Yours faithfully,

S. R. HESELYNE,

Secretary.

## M.

[Appended by the Committee on Old-age Pensions, 8 August, 1896.]

(Evening News, 14th August, 1896.)

Two of the witnesses examined yesterday before the Committee of the Legislative Assembly on Old Age Pensions, were Mr. Oliffe, secretary of Tattersall's Club, and Mr. Clibborn, secretary of the A.J.C. According to our senior morning contemporary, there is an idea abroad that causes of distress should be made to assist in the alleviation of the aged poor, and sport being regarded as one of these causes, the officials referred to were catechised as to whether a revenue could be obtained from sport for the object under inquiry. The idea of making public amusements contribute towards the support of the poor is not original. It is generally known that a formidable percentage is levied on the receipts of Paris theatres for the poor of the French capital, but perhaps not quite so generally known that theatrical managers have a way of returning their receipts at more than they are, and so for advertisement's sake paying a heavier tax. There is a custom, too, generally observed, of the winner of the Grand Prix de Paris, the great race of the year, handing over a portion of the stakes for the poor.

1896.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

## COLLISION BETWEEN THE "SOL" AND "ALATHEA" STEAMERS.

(PETITION FROM THE PARRAMATTA RIVER STEAMERS AND TRAMWAY COMPANY, LIMITED, PRAYING TO BE REPRESENTED BY COUNSEL OR ATTORNEY, OR IN PERSON, BEFORE SELECT COMMITTEE ON.)

*Received by the Legislative Assembly, 27 October, 1896.*

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales, in  
Parliament assembled.

The Petition of the Parramatta River Steamers and Tramway Company, Limited,—

HUMBLY SHOWETH:—

1. That on the 22nd day of September last past your Honorable House appointed a Select Committee to inquire into and report upon the collision between the "Sol" and the "Alathea" steamers.
2. That your Petitioners are the owners of the steamer "Alathea."
3. That, on the said inquiry, the interests of your Petitioners, of considerable magnitude, are likely to be affected, your Petitioners humbly pray that they may be represented by Counsel or Attorney before the said Select Committee, with the right to call witnesses and adduce evidence, and to examine and cross-examine such witnesses as may attend to give evidence before the said Committee.
4. And your Petitioners, as in duty bound, will ever pray.

Dated at Sydney this 23rd day of October, 1896.

The common seal of the Parramatta River Steamers and Tramway Company, Limited, was hereunto affixed, by order of the Board of Directors, in the presence of—

WILLIAM LEES, }  
F. A. WRIGHT, } Directors.  
ARTHUR COOPER, Manager.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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REPORT FROM THE SELECT COMMITTEE

ON THE

COLLISION BETWEEN THE "SOL" AND  
"ALATHEA" STEAMERS ;

TOGETHER WITH THE

PROCEEDINGS OF THE COMMITTEE,

MINUTES OF EVIDENCE,

AND

APPENDIX.

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*Printed under No. 27 Report from Printing Committee, 13 November, 1896, A.M.*

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SYDNEY: WILLIAM APPELEGATE GULLICK, GOVERNMENT PRINTER.

1896.

1896.

EXTRACTS FROM THE VOTES AND PROCEEDINGS OF THE  
LEGISLATIVE ASSEMBLY.

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VOTES NO. 58. TUESDAY, 22 SEPTEMBER, 1896.

14. COLLISION BETWEEN THE "SOL" AND "ALATHEA" STEAMERS :—Mr. Knox moved, pursuant to Notice,—
- (1.) That a Select Committee be appointed to inquire into and report upon the collision between the "Sol" and "Alathea" steamers.
- (2.) That such Committee consist of Mr. Davis, Mr. W. H. B. Piddington, Mr. Ferguson, Mr. Edden, Mr. Watson, Mr. Wilks, Mr. Wood, Mr. Waddell, Mr. McFarlane, and the Mover.
- Question put and passed.
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VOTES NO. 73. TUESDAY, 27 OCTOBER, 1896.

5. COLLISION BETWEEN THE "SOL" AND "ALATHEA" STEAMERS :—Mr. A. B. Piddington presented a Petition from the Parramatta River Steamers and Tramway Company (Limited), stating that a Select Committee had been appointed by the House to inquire into and report upon the collision between the "Sol" and "Alathea" steamers; and praying to be represented by counsel or attorney, or in person, before the said Committee, with the right to call witnesses, and to examine and cross-examine all witnesses that may give evidence.
- Petition received.
- Ordered to be referred to the Select Committee.
- 

VOTES NO. 80. WEDNESDAY, 11 NOVEMBER, 1896.

9. COLLISION BETWEEN THE "SOL" AND "ALATHEA" STEAMERS :—Mr. W. H. B. Piddington, as Chairman, brought up the Report from, and laid upon the Table the Minutes of Proceedings of, and Evidence taken before the Select Committee for whose consideration and report this subject was referred on 22nd September, 1896; together with Appendix.
- Referred by Sessional Order to the Printing Committee.
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1896.

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COLLISION BETWEEN THE "SOL" AND "ALATHEA" STEAMERS.

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REPORT.

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THE SELECT COMMITTEE of the Legislative Assembly, appointed on 22nd September, 1896, "to inquire into and report upon the collision between the 'Sol' and 'Alathea' steamers,"—have agreed to the following Report :—

Your Committee having examined the witnesses named in the list\* (whose evidence will be found appended hereto), are of opinion :—

\* See List,  
page 5.

That the Government are morally, though not legally, responsible to the owners of the "Alathea" for the damages caused by the collision ; and your Committee feel justified in coming to such a conclusion in view of the strong comments of the Chief Justice—the other Judges concurring—on the appeal.

Your Committee consider that the Government should take the whole matter into consideration, with a view to making such restitution as the case deserves.

In view of the evidence given before your Committee, they desire to draw the attention of the Minister to the practice of allowing persons other than Government officials to use the steamers of the Marine Board without special authority.

W. H. B. PIDDINGTON,  
Chairman.

No. 2 Committee Room,  
Legislative Assembly,  
11th November, 1896.

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PROCEEDINGS OF THE COMMITTEE.

TUESDAY, 20 OCTOBER, 1896.

MEMBERS PRESENT:—

Mr. Ferguson,		Mr. Knox,
Mr. W. H. B. Piddington,		Mr. Watson.

Mr. Piddington called to the Chair.

Entry from Votes and Proceedings, appointing the Committee, read by the Clerk.

[Adjourned till Thursday next, at Two o'clock.]

THURSDAY, 22 OCTOBER, 1896.

MEMBERS PRESENT:—

Mr. W. H. B. Piddington in the Chair.

Mr. Ferguson,		Mr. Knox,
Mr. Watson,		Mr. Wood.

James William Johnston called in, sworn, and examined.

Witness handed in copy of the Judge's notes on the trial of the Parramatta River Steamers and Tramway Company (Limited) v. Hixson, as printed for the purpose of appeal. [Appendix A1.] Copy of the shorthand note of the judgment of the Full Court. [Appendix A2.]

Witness withdrew.

The Chairman handed in copy of a letter from the Secretary to the Marine Board to the Under Secretary for Finance and Trade, respecting the Supreme Court action in reference to the collision between the "Sol" and "Alathea" steamers. [Appendix B.]

[Adjourned till Wednesday next, at Two o'clock.]

WEDNESDAY, 28 OCTOBER, 1896.

MEMBERS PRESENT:—

Mr. W. H. B. Piddington in the Chair.

Mr. Wilks,		Mr. Wood.
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Entry from Votes and Proceedings in reference to the Petition of the Parramatta River Steamers and Tramway Company (Limited), praying to be represented by counsel, or attorney, or in person, before the Committee, read by the Clerk.

Present:—J. W. Johnston, Esq. (Messrs. Johnston, Minter, Simpson, & Company, Solicitors for the Parramatta River Steamers and Tramway Company, Limited).

Captain Francis Hixson (President of the Marine Board) called in, sworn, and examined.

Witness withdrew.

Arthur Stanley Cowper (Manager of the Parramatta River Steamers and Tramway Company, Limited) called in, sworn, and examined.

Witness withdrew.

[Adjourned till To-morrow, at Three o'clock.]

THURSDAY, 29 OCTOBER, 1896.

MEMBERS PRESENT:—

Mr. W. H. B. Piddington,		Mr. Waddell.
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In the absence of a quorum the meeting called for this day lapsed.

WEDNESDAY, 4 NOVEMBER, 1896.

MEMBERS PRESENT:—

Mr. Edden,		Mr. W. H. B. Piddington.
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In the absence of a quorum the meeting called for this day lapsed.

THURSDAY, 5 NOVEMBER, 1896.

MEMBERS PRESENT:—

Mr. W. H. B. Piddington in the Chair.

Mr. Davis,		Mr. Watson,
		Mr. Wood.

Present:—J. W. Johnston, Esq. (Messrs. Johnston, Minter, Simpson, & Company, Solicitors for the Parramatta River Steamers and Tramway Company, Limited).

John Puckeridge called in, sworn, and examined.

Witness withdrew.

Adjourned till Tuesday next at 12 o'clock noon.

TUESDAY,

TUESDAY, 10 NOVEMBER, 1896.

MEMBERS PRESENT:—

Mr. W. H. B. Piddington in the Chair.  
 Mr. Davis, | Mr. Waddell,  
 Mr. Wilks.

Present:—J. W. Johnston, Esq. (*Messrs. Johnston, Minter, Simpson, & Company, Solicitors for the Parramatta River Steamers and Tramway Company, Limited*).

Robert George Menzies called in, sworn, and examined.

Witness withdrew.

James William Johnston recalled and further examined.

Witness handed in articles from the *Daily Telegraph* and *Evening News* newspapers, commenting on the decision of the Full Court. [*Appendix C 1 and 2.*] Extract from *Sydney Morning Herald* of 13th September, 1894, giving the summing-up of the Judge on the trial, and the questions he put to the jury, with their answers. [*Appendix C 3.*]

[Adjourned till To-morrow, at half-past Three o'clock.]

WEDNESDAY, 11 NOVEMBER, 1896.

MEMBERS PRESENT:—

Mr. W. H. B. Piddington in the Chair.  
 Mr. Davis, | Mr. Watson,  
 Mr. Wilks.

Chairman submitted Draft Report.  
 Same read, amended, and agreed to.  
 Chairman to report to the House.

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1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

MINUTES OF EVIDENCE

TAKEN BY

THE SELECT COMMITTEE

APPOINTED TO INQUIRE INTO THE

COLLISION BETWEEN THE "SOL" AND "ALATHEA"  
STEAMERS.

THURSDAY, 22 OCTOBER, 1896.

Present:—

MR. KNOX,  
MR. FERGUSON,MR. WATSON,  
MR. WOOD.

W. H. B. PIDDINGTON, Esq., IN THE CHAIR.

James William Johnson sworn and examined:—

1. *Chairman.*] Are you senior member of the firm of Johnson, Minter, & Co.? Yes; we acted for the Parramatta Steamship Company in connection with this collision.
2. Will you give us a short *résumé* of the case? I had to do with this case, and our side contended that the "Sol" was wholly to blame for the collision that happened. The consequence of that collision was that the owners of the "Alathea" claimed damages which were put down at about £1,100. They were considerably more than what the jury assessed them at. We then wrote to the Government Department, and we were referred to solicitors on their behalf. They contended that it was the "Alathea" that was to blame, so we took steps to have that question decided by the Court. That was the only question that was before the Court. Evidence at great length was put forward on both sides, and the jury found that the "Sol" was to blame. Incidentally, there arose a question which we were quite unprepared for; that was whether the "Sol," assuming her to be in the wrong, was liable for the damage done, because it was contended by Mr. Bruce Smith that she was not on the business of the Marine Board. In other words, Mr. Bruce Smith's contention was of this kind: that if the owner of a carriage told his servant to go to Dawes' Point by way of George-street, and his servant went down Pitt-street, ran over somebody, and broke somebody's leg, the owner of the carriage would not be liable, because the servant was not following his master's instructions. He was not on his master's business. That is one of those refined technical distinctions in law which, I daresay, the two lawyers I am speaking to will know how difficult it is to gauge. The only question we went to Court to fight was found in our favour, with damages which were assessed at £600, with costs.
3. Will you put in the Judge's notes on the trial? I produce a copy of the Judge's notes as printed for the purpose of appeal. [*Appendix A 1.*]
4. *Mr. Knox.*] Was not the case the subject of an appeal? The other side got a rule *nisi* to upset the verdict on leave reserved, and that rule was made absolute. I produce what appears to me to be a portion of the Judge's notes of the evidence, and I presume that evidence was considered by the Court to be all that affected the question before them.
5. Do you also produce a copy of the shorthand note of the judgment of the Full Court setting the verdict aside? Yes. [*Appendix A 2.*]
6. Did the jury find that the collision was owing to the default of the "Sol"? Certainly.
7. Was the finding of the jury upset on the ground that the Court found that the master of the "Sol" was not on a trip authorised by the Marine Board at the time of the collision? That is so, and it did not affect the question as to who was right or wrong in the collision.

J. W.  
Johnson.  
22 Oct., 1896.

- J. W. Johnson.  
22 Oct., 1896.
8. Can you tell us what the costs came to? The Parramatta Steamship Company have had to pay over £300 for their own costs.
9. Does that include their own costs, or the costs of the other side only? They have not been called upon at present to pay the costs of the other side.
10. *Chairman.*] Do the Government provide for those costs? There have been negotiations of some kind or other. I think there was an intimation that the matter would be allowed to rest, and that we should not be called upon to pay the costs of the other side.
11. *Mr. Watson.*] Were they adjudged liable for the costs of the other side? Yes; the rule was granted with costs.
12. Does that mean the costs of the action and of the appeal? It means that they were ordered to pay the other side's costs, besides their own costs of the trial and all proceedings, which latter came to over £300.
13. *Mr. Knox.*] Do I understand that the Government have practically relinquished their claim to costs against the Company? I can hardly go so far; there is a sort of understanding that if we were to let the matter drop there it would rest.
14. *Mr. Wood.*] Does the sum of £300 include the costs of both sides? No, the Government costs would be extra. Even if we got the verdict of £600—if the Government came forward and said we will give you £600—we should only get £300 to recoup us for what we say amounts to £1,100 damages.
15. *Mr. Knox.*] Was there any appeal on the ground that the verdict was excessive? No, there certainly was not. I would point out that the Judges, who felt themselves constrained to give the Government the benefit of this technical point, went on to suggest that this was a case in which the Government of the day should meet the claim in a liberal spirit. Sir Frederick Darley said: "I must say it is a case of extreme hardship for the plaintiffs, and it is well known that the Marine Board had allowed this steamer to be used for purposes which, strictly speaking, did not fall within the Act of Parliament, and under the circumstances it will be a question for the Government to consider by and by whether the plaintiffs are not entitled to consideration for damages." Sir William Windeyer said: "There is no escape from setting aside the verdict, and I agree with the Chief Justice that it will be a matter for the consideration of the Government whether reparation should be made to the plaintiffs because of the dereliction of the Board in allowing the boat to be used in this way."
16. Up to the present time, as I understand it, the owners of the "Alathea" have not had a shilling of compensation? They are worse off than if they had not gone to trial by the amount of the costs.
17. *Mr. Wood.*] The only reason why the verdict was set aside was because the jury found that the "Sol" was engaged in work other than that of the Marine Board? Yes. It turned out unexpectedly for our side that on the occasion of the collision there were two gentlemen on board the "Sol" who were going to North Shore on some business of their own, and had no business on the steamer. I suppose they persuaded the captain, and he was going to take them over there. I may point out that whether that was true or not, the captain was in charge of the steamer when the collision took place. She was under his guidance, and the jury found that it was owing to his bad judgment or bad seamanship that the collision took place.
18. *Mr. Ferguson.*] Who were the gentlemen on board the "Sol" at the time? I do not remember.
19. Were they Government officers? No.
20. *Chairman.*] Do you know if the Secretary of the Marine Board ever communicated in any way with the Parramatta Steamship Company with regard to settling this matter before the trial? I think I am at liberty to say that Captain Hickson was always prepared to recommend the Government to pay a substantial sum. As far as I know, we have never had any formal offer.
21. *Mr. Watson.*] Do I understand you to say that the solicitor for the Crown, in accepting service from you in connection with this action, contended that the "Alathea" was to blame? Yes; that was the sole contention we went into Court to fight.
22. They did not, then, contend that they were not responsible? Their only contention was that our side was to blame. The other contention was latent; it discovered itself during the development of the evidence at the trial.
23. *Mr. Knox.*] I suppose they pleaded "not guilty"? I think so.
24. Would not that put you to the proof of everything and enable them to set up any defence? Yes.
25. *Mr. Watson.*] Do I understand that the solicitor on the other side contended, in the first instance, that the "Alathea" was responsible? Yes. The contention was that the "Alathea" should have put her helm in the opposite way to what she did. We said that was all nonsense; that the collision was inevitable; that the "Sol" darted out stern first from her hidden retreat. I think I may go so far as to say that the Judge intimated that he concurred in the verdict of the jury.
26. *Mr. Watson.*] I think I understood you to say that if the owners of the "Alathea" got their verdict of £600 it would only mean that they would get £300 towards making good the damage? No; if the verdict had then been upheld we should have been enabled to make the Government pay all our costs, so that we should then have got about £900. What I meant is that if we were to be paid the verdict now, and no costs, it would be as I have described, namely, we should only get £300 to recoup us for £1,100 damages.
27. Then actually at present the company reckon themselves out of pocket about £1,400, even if they do not pay the Government costs; that is, £1,100 damages, and £300 for their own costs? Yes; that is what they are out of pocket at the present moment in round numbers. I knew that was Captain Donald's estimate; he was manager of the company at the time; he consulted me and instructed me all through. He always said that the damages were about that amount. The steamer was sunk.
28. *Mr. Knox.*] I believe one thing that contributed to the collision, as it appears from the evidence, was that the man at the wheel on board the "Sol" had to leave the wheel and go to the engines, although they were backing out? Yes; he left the wheel to go forward to the engines at the critical moment.
29. Although backing out at Circular Quay, they had not a man looking after the engines? Yes; the Court was satisfied with the verdict; they were unwilling to move it, but they felt constrained to do so on this technical objection.
30. *Mr. Wood.*] Was there any contention by the other side that the actual damages sustained were under the amount of the verdict? The other side contended that the damages were considerably under £1,000.

31. Did the other side contend that the damage done was under the amount of damages awarded by the jury? I do not think so. They attempted to cut down damages as much as they could.

32. Was excessive damages made a ground of appeal? No, certainly not.

33. *Mr. Knox.*] Did the other side ever express any contention apart from appealing that £600 was too much? I have not heard of it.

34. I mean since the verdict was given? No. We felt aggrieved that the jury did not give larger damages. It is the duty of counsel for the defendant when there is a claim for damages to cut down the damages as much as possible.

35. At the trial, did they bring forward any evidence to show that the damage sustained was less? They brought forward evidence to show that the damages they were liable for in any case could not be £1,100.

36. They did not contend for any amount? No, only in a general way. They went into minutiae about the damages. We showed that the "Alathea" had, a short time before the collision, been thoroughly done up. They wanted to make out that we could not get those damages, and I think the jury adopted that view to a certain extent. I think I ought to point out this on the question of hardship: that it did not matter a bit whether this steamer was going to put those two gentlemen down at North Shore or at Circular Quay, because the steamer would back out, and when the collision took place she was backing out. It did not matter whether she was going to the North Shore or to the Princes' Stairs. I mention this because it came out in the evidence that the duty of the "Sol" on that day was to go to Princes' Stairs. I say it made no difference whether she was going to North Shore or Princes' Stairs.

37. *Mr. Ferguson.*] The only difference might be as to the time at which she went? They could have easily ascertained whether a steamer was coming along before they started out, by sending a man on to the wharf to look, when he would have seen the "Alathea" coming along the wall towards Princes' Stairs. Instead of that, the captain never got out off his boat; he backed out before looking, and the man left the wheel. If there had been a man at the wheel, and another man at the engines to stop them, the collision would probably never have happened. [*The witness explained this by a rough sketch.*]

J. W.  
Johnson.

22 Oct., 1896.

WEDNESDAY, 28 OCTOBER, 1896.

Present:—

MR. WILKS, | MR. WOOD.

W. H. B. PIDDINGTON, Esq., IN THE CHAIR.

J. W. Johnson, Esq., of Messrs. Johnson, Minter, Simpson, & Co., solicitors, appeared on behalf of the Parramatta River Steamers and Tramway Company.

Captain Francis Hixson called in, sworn, and examined:—

38. *Chairman.*] Are you President of the Marine Board? Yes.

39. Will you kindly give the Committee a short *résumé* of the case from your point of view? In the first place, the "Alathea" was a Parramatta steamer, bound to a certain place in Sydney Cove from Parramatta. The steamer "Sol" was ordered by the Marine Board Department to go to perform some duty in connection with the Museum. The officer in charge of the "Sol," instead of sending her direct to that place, allowed her to be diverted to take my son and another young man across to North Shore. It was in that diversion from the "Sol's" course that the collision took place. I wanted the matter to be conducted strictly upon the merits of the case as regards the rules and regulations of the harbour for preventing collisions. The Marine Board's counsel did not take my advice in that respect. I did not consider that the "Sol" was to blame, certainly not in the manner in which the Court decided against her, but instead of taking my advice, and having the case fought out in accordance with the rules and regulations, my counsel slurred that part of the question and confined themselves to the law point as to whether the officer on board the "Sol" was justified or not in having diverted the vessel, and whether the Marine Board was liable for any damages that might have been sustained under the circumstances. The verdict of the Court was that the "Sol" was to blame, but at the same time the law point was against the "Alathea"—that the "Sol" had no business to be sent in the way she was when the collision took place.

40. *Mr. Wilks.*] Might not that contention be raised in the case of any collision; for instance, supposing a vessel was bound for Newcastle, and for some reason or other she went across to North Shore? The contention in this case arose more in relation to the Masters and Servants Act. If I have a carriage and tell my coachman to drive to Darlinghurst, and he comes into collision, and does some damage on the road, I am liable; but if he, without my authority, drives down to Darling Point, and gets into collision there, I am relieved from any liability. I should like to say that the verdict was in favour of the "Alathea," so far as the actual merits of the collision were concerned, but it was against her on the law point. After some correspondence the Government paid the law costs of the Marine Board, and we also repaired our boat, which cost about £40. Although we were right in law, we paid our own damages as regards repairs, and we paid our own counsel £318.

41. *Chairman.*] Was the "Sol" on the business of the Marine Board when the collision took place? No; she was diverted in the manner I have described.

42. Was it the practice, and is it the practice now, for the Marine Board's boats to be used by private individuals, and still not be considered to be on the business of the Board? No. I think the point is, the officer at the boatshed had no business to send a steamer away except by the orders of the Marine Board. It is perhaps impossible to have a hard and fast rule, and probably the officer has diverted her from her proper business on some other occasions.

43. Does that practice on the part of the officers still continue? We have never given contrary orders.

44. Do you hold that the "Sol" in this instance was practically upon private business, and not in connection with any work of the Marine Board? Certainly the officer was not justified in diverting the vessel in the way he did. The vessel had dredges and other things on board for the Museum work, but instead of going direct to perform the Museum work, according to orders from the Marine Board, she was turned across the harbour.

45. *Mr. Wilks.*] Am I to understand that under the Masters and Servants Act any responsibility would rest upon the boatswain? Yes, strictly speaking, I suppose.

Capt.  
F. Hixson.

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Capt.  
F. Hixson.  
28 Oct., 1896.

46. It was outside the service of the Marine Board, and it was upon his own responsibility that he diverted the steamer from her course? Yes; the Marine Board gave orders to do a certain thing, and the officer took it upon himself to divert the steamer.
47. Then the contention is that the responsibility rests on the boatswain? Perhaps so.
48. *Mr. Wood.*] Do you say that the verdict was given in favour of the Marine Board on a law point? Yes.
49. What induced the Marine Board to contest the case;—was it on the ground that they believed that they had the law on their side or the equity; that is, that the “Alathea” was to blame according to the regulations? The Marine Board wished to compromise the matter in the first instance. They wished to share the responsibility, and thus minimise the costs.
50. For what reason? For the reason that, as a rule, it is very bad for the Government or the Marine Board to go to law against an individual.
51. It was not because they believed their boat was in fault? Partly so, though I never believed that the “Alathea” was faultless. I thought she contributed very largely to the collision.
52. Was any evidence brought by your side, or was there any attempt to bring evidence, to show that the “Alathea” was to blame? Yes; there were witnesses brought on our side, but my remark had reference to the way in which our barristers made use of the witnesses.
53. Did they make that one of the points in the contest, that the other boat was really in the wrong? Yes, certainly.
54. In the face of that evidence the jury still brought in a verdict giving damages in favour of the “Alathea”? Yes.
55. Although that evidence was thoroughly gone into? No, I say it was not. My counsel, instead of devoting their attention strongly to the actual facts of the collision, paid far more attention to the law point, which they insisted on bringing forward.
56. What regulation would apply to this particular case? I believe the regulation which the “Alathea” infringed was that of travelling too fast, and a regulation also says that if a vessel has another on her own starboard side the last-mentioned vessel (that would be the “Alathea”) is bound to keep out of the way.
57. In this case it appears that the “Alathea” did not? In this case the “Alathea” was rounding towards the danger all the time; she was rounding into Sydney Cove. She came round Dawes’ Point, and was rounding all the time towards the “Sol.”
58. Clearly showing that she had infringed one of the regulations she should follow? Yes.
59. When you advised the Marine Board to compromise, what did you consider was the amount of damage sustained by the “Alathea”? The Marine Board would have been prepared to recommend the Government to pay £700 rather than go into Court. We offered the owners of the “Alathea” £700 before the proceedings commenced; that, I consider, was a very ample offer for the damage sustained. It was made through our lawyers.
60. There was no question of costs included in that offer? No; we wanted to compromise from the first, and in the end, rather than go to law, we were ready to offer £700.
61. Then you think that a stronger case might have been made out on your behalf on account of the infringement of the regulations had your counsel given more prominence to that view of the case? I think so.
62. Do you think more evidence could have been brought on that point? Yes; and I am sure false evidence was given with regard to the speed of the “Alathea.”
63. Could more evidence have been adduced to show that the “Alathea” was in the wrong? I think our counsel might certainly have made more of our case had they paid more attention to what I wanted them to.
64. *Mr. Johnson.*] Were you in Court all the time when the trial of this case took place? Yes; pretty well.
65. Do you not recollect that your side called a number of witnesses? Yes.
66. What about? Different points.
67. Were not all those witnesses called to prove that the “Sol” was in the right and that the “Alathea” was in the wrong? No.
68. What else were the witnesses called to prove? To show that the “Sol” was not engaged on *bona fide* business, but was diverted from it by the boatswain.
69. Can you name more than one witness who was called to prove that? Myself, for one; Mr. Puckeridge, the boatswain, for another. I admit that my side went into the rule of the road, but they did not pay that attention to it which I wanted.
70. But you will admit that your counsel examined a number of witnesses solely on the question as to who was right or wrong as to the rule of the road? They examined several witnesses on that point.
71. Did they not examine a good many? Well, it is two years ago since the trial.
72. Were there not seven or eight witnesses on that point? I do not think there were so many; we had very few witnesses. There were only two people on the boat beside the crew.
73. The fact of there being two young gentlemen on the boat was not disputed? No.
74. There was no evidence wanted to prove that? No.
75. That was a matter of contention, and not evidence? The fact of their being on board was one thing, but the fact of the boatswain allowing them on board was another thing. There was no dispute about their being on board.
76. Do you not think that there were at least seven or eight witnesses called by your side to prove that the boatswain of the “Sol” was in the right, and that the captain of the “Alathea” was in the wrong? Certainly not the boatswain; the boatswain was not in the boat.
77. Then do you call him the captain? The coxswain was in charge.
78. Were there not a lot of witnesses called to prove that he could have adopted no other tactics than he did adopt? There were several witnesses called, no doubt, on each side, so far as the rule of the road is concerned.
79. What, then, is your complaint against your counsel? That they did not pay sufficient attention to the speed of the steamer, and to article 18 of the rule of the road, which says that if any vessel has another on her own starboard side the last-named vessel is bound to give way.

## INQUIRE INTO THE COLLISION BETWEEN THE "SOL" AND "ALATHEA" STEAMERS.

Capt.  
F. Hixson.

28 Oct., 1896.

80. That was a matter of contention, not of evidence;—did you not call witnesses to prove that the "Alathea" was going at a greater speed than she ought? Yes.
81. If that were so, your counsel laid the ground for that contention? Yes.
82. Do you blame them for not contending on that point stoutly enough? For not paying sufficient attention to it.
83. But evidence was called upon that point? Certain evidence.
84. You say they contended it to a certain extent, but not strongly enough? Yes.
85. Were not all the facts *pro* and *con* in favour of one ship as against the other made plain as far as they could be elicited? Perhaps so.
86. The rule of the road, as you put it correctly, says that a steamer, when she is in danger of collision, having the other steamer on the starboard hand is bound to get out of the way? Yes.
87. At this critical moment was there not another steamer alongside the "Alathea" which prevented her from doing that? No.
88. Are you sure of that? Yes.
89. Were you there, and did you see the collision? No.
90. Can you say now whether what I have said is not absolutely correct,—that it was proved at the trial that the "Alathea" could not starboard her helm because the "Bunya Bunya" was going along at the same speed, and that if the "Alathea" had altered her course in that direction they would have collided? That was not proved. Evidence was given to that effect, but that is one of the points for which I blame my counsel for not sifting.
91. Did not several witnesses swear to that? The position of the affair was this: My counsel, in place of going in for the actual law of the case, so far as the rule of the road is concerned, slurred that part of it, and went in distinctly for the Masters and Servants Act.
92. Was it not proved by several witnesses that the "Alathea," by reason of the large boat, the "Bunya Bunya," being alongside of her, could not starboard her helm? I do not know that. There were several witnesses on that point. The master of the "Alathea" was the particular man who gave that evidence.
93. Was it not proved that the moment the master of the "Alathea" found he could not starboard his helm, for the reason I have stated, he stopped the engines, and then went full speed astern? It was said that he did so.
94. Was that not sworn? Yes.
95. In applying and construing these rules, is it not laid down that "due regard must be had to all dangers of navigation; due regard must also be had to any special circumstances which may exist in any particular case rendering a departure from the above rules necessary in order to avoid immediate danger"? Yes; that is correct.
96. I take it, that from your point of view, the duty of the captain of the "Alathea" was to starboard his helm? No.
97. Then what do you say he should have done? He came in at enormous speed, when he should have kept out of the way. He was not able to do so in consequence of the great way there was on the vessel.
98. Supposing you had been on board the "Alathea," what would you have done? I would not have gone round the point in the rapid way he did.
99. I mean that when you saw the "Sol" almost coming at you, and you were on board the "Alathea," what would you have done? Probably I would have gone full speed astern.
100. Did not the captain of the "Alathea" go full speed astern? Yes; I believe he did, but I was not there.
101. Was it not sworn by two or three witnesses that he did go full speed astern? Probably it was so.
102. Was there anything else for him to do? When the collision became inevitable, nothing else.
103. Now about the speed the "Alathea" was going;—what speed is she allowed to go at? Six miles an hour inside the cove.
104. Did you not call witnesses to prove that she was going at more than that speed? Yes; one witness, I believe.
105. So you fought that point? We did not call witnesses for any special purpose. We called witnesses on our side, but I cannot positively say what special points they took up. I know witnesses on your side gave false evidence.
106. Were you at the collision? No.
107. Do you not know that the witnesses swore that the "Alathea" was not going more than 6 miles an hour? Yes.
108. Did they not swear that before they rounded Dawes' Point they slowed down? No; they did not. They swore most extraordinary things, which no one believed. They said there was a standing order to their engineers to slacken speed at a certain time, and that the collision occurred after that time.
109. Do you not know that it was sworn at the trial by two or three witnesses on board the "Alathea" that the order had been given to slacken speed? No; you are mistaken.
110. Will you say that that is not so? What was said was that the engineer eased the speed in accordance with the general order on the subject—to do so between Goat Island and Dawes' Point.
111. Do you know that the "Alathea" passed this particular spot where the collision took place every morning at the same moment? I do not know that. I know it was about the time.
112. She is timed to leave a particular spot at an exact time? Yes, I suppose so.
113. Her speed is pretty well known;—do you remember that it was sworn that she arrived at the wharf at Circular Quay almost at the same moment every morning? Yes.
114. Does it not strike you as a most remarkable thing in connection with this collision that your people on board the "Sol," knowing that this steamer passed every morning at a particular time, did not go and look for the steamer before starting out? Yes; I spoke to the coxswain about that subject. His assertion was that first they saw a North Shore steamer coming, and they took precautions to keep out of her way, and then most suddenly and most rapidly came the "Alathea" rushing up and overtaking the North Shore steamer, and she was in the position where the collision occurred so rapidly that they really had not time to get out of her way. They are hidden from a view by the point until they round it. The North Shore steamer was the "Bunya Bunya."
115. Could the coxswain on board the "Sol," when inside the inlet, see the "Alathea" coming round the Wall? No.

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116. If they had got out of the steamer before starting and gone upon the wharf, could they not have seen the "Alathea" coming? Probably they could.
117. Do you not think that the coxswain was bound to expect that the steamer would be there almost at that moment? I believe that is so.
118. Why did he not go and look? The facts of the case show this, that the "Sol" was coming out and they thought everything was right. The engineer unfortunately left his engine thinking everything was right, and he went to attend to his fire. The "Alathea" was then upon her. The "Sol" came out stern first, and had to turn round. The engineer left his starting-bar when he thought everything was clear, and went to attend to the fires. The "Alathea" was on top of her before the man could get back to his engines.
119. See if you cannot admit this: that the fact of its being known that the "Alathea" passed that spot at the same moment every morning settled the case against you? I do not think so. The men in the employ of the Board do not carry watches in their pockets.
120. Did you hear the Judge's summing up? Yes.
121. Did not the Judge tell the jury this: "Gentlemen, it is for you to consider whether those in charge of the 'Sol,' knowing that the 'Alathea' came by this spot at the same moment every morning, had no right to dart out from that inlet before ascertaining whether she was coming or had gone past"? He might have put it somewhat in that way, but that is only the Judge's speech. I say again that these men of mine do not know the time to a minute or ten minutes, nor do any other working men about the wharfs; but I repeat the men came out as they thought carefully. The man left his starting-gear, which he should not have done, and there, to a great extent, we were wrong. He left his starting-bar and went below to attend to the fire, and the "Alathea" was on top of them before they could look round. When the coxswain wanted the steamer stopped he called out, but the engineer was not at the starting-bar.
122. Do you know what was the original claim made by the owners of the "Alathea"? I do not remember; but I may say the claim was most exorbitant, and certain reductions were made in Court at the instance of our counsel.
123. No; those were only attempts at reductions—your counsel could not make reductions? Your side accepted them, and the Judge gave a verdict for £600.
124. Was it not the jury that gave a verdict for £600? Yes.
125. Do you recollect that the original claim was for £1,100, and that a great deal of that was for demurrage? Yes.
126. You would not admit demurrage? No. What we would not admit was this: you charged us demurrage and also the hire of another steamer when we were paying you for demurrage.
127. I admit we could not claim both? That was what you did claim.
128. Did you not also dispute a large sum which was made up for renovating the ship? Yes.
129. Do you know what that came to? I do not know, but it came to this: £1,100 damages were claimed, and the jury, after hearing evidence, gave a verdict for £600.
130. Eventually, you offered £700? No; that was offered previously. When you went to law we did not offer anything.
131. Previous to what? Previous to going to law. Knowing that the thing was very much in the nature of an accident, we suggested that £700 might be offered to you.
132. Then I suppose I may take it that you considered that the "Alathea" had at least suffered damage to that extent? No.
133. But you would not have offered £700 if you thought we had only suffered damage to the amount of £600? We offered £700 on the merits of the case.
134. To whom did you make the offer? We instructed our solicitors, Hamilton and Sly, to make it.
135. You feel quite confident about that? Yes; but I am afraid there was some blunder made between the two solicitors. I am under the impression that instead of offering you £700, the other side said, "You will have to take something less." You wanted £1,000, and we would not give it. We told our solicitors that we would offer you £700, and I am afraid that they did not put it to you in as straightforward a manner as they ought to have done.
136. Is not this what took place: you authorised your solicitors to offer us £700? Yes.
137. Did they not tell you afterwards that they found we wanted £1,000, and that therefore they offered us nothing? I do not remember that. I quite admit I am afraid that the offer did not reach you in the way we intended it should.
138. Have you made any recommendation to the Government since the verdict was given, or have you been consulted about it? I am afraid that is a departmental matter.
139. I do not know. I look upon you as the representative of the Department;—is not that right? Yes.
140. I think it will be very pertinent to the question which is being investigated to know your views? We were all along for compromising. When you forced us to law we had to go.
141. Supposing we never got your offer? I think we can find it stated among the papers that you said you would not take less than £1,000.
142. I think you will find among the papers that we wanted £1,000, but I do not think you will find it among the papers that we ever refused £700? Probably it is so.
143. You have stated that your son and another young gentleman were on board the "Sol"? Yes.
144. What were the coxswain's orders on that morning? I presume that the coxswain had orders to go for Mr. Ramsay of the Museum, but he afterwards got orders from the boatswain to land my son and young Mr. Cape at North Shore before going there.
145. Then he was going b round about way to Princes Stairs? Yes.
146. From your point of view, as a nautical man, might it not be held nautically that, although the coxswain was going to North Shore, he was on his way to Princes Stairs in a round-about way? No; according to the diagram which you have produced he is going away from Princes Stairs. However, it was brought down to this point, that he was to go one way according to Marine Board orders, but he was diverted in another direction by the boatswain.
147. Coming out of the inlet would he not have to come straight out for a bit? Yes.
148. Was the proper officer in charge of the vessel when the collision took place? Yes.
149. Whether those two young gentlemen were there or not it would be the same officer who would be in charge? Yes.

150. Supposing I wanted to be taken across to North Shore, would he take me? I cannot tell you.
151. Supposing anyone went down to him that morning, and said "Boatswain, I want to go to North Shore; will you take me over";—would he do so? I do not think so. Probably because this young man was my son and an officer in the Naval Brigade, that fact would exercise more influence over the boatswain than if he were an ordinary individual.
152. It was not unusual to take your son or his friends? Yes; it was unusual.
153. In whose charge was the movement of the boat on that morning? In charge of the boatswain until the boat was sent away from his shed. After she left the shed the boat would be in charge of the coxswain.
154. In other words the Government had deputed the charge of the boat to the boatswain on that day? That man is in subordinate charge of the establishment. There are several launches there, and this man had charge of them while they were there.
155. Then, on behalf of the Government, he had the control of the movements of those boats on that morning? No; that is not so. He exceeded his authority by acting as he did.
156. Up to the time that the two young gentlemen went there, who had charge of the boat's movements for the Government that morning? The boatswain. After he received orders on the subject from the Marine Board he should not have deviated from them.
157. Then, while having such authority, he took upon himself to direct the coxswain to take those two young gentlemen over to North Shore? Yes.
158. Assuming that the "Sol" was altogether in the wrong in this matter, and that the "Alathea" was right, do you not think it is a hard point for the Government to take, that the Government are free from responsibility, because these two young gentlemen were on board the boat? They did not take the point on the ground that the two young gentlemen were on board. The point they took was the law point, that the boatswain of the establishment, instead of sending the boat in the direction ordered, sent her in another direction.
159. In order to take those two young gentlemen over to North Shore? Yes.
160. Do you not think that is a hard point? Yes; that is hard strict law.
161. Were you not a bit ashamed of it at the time? It is not what I thought. I tell you I was dissatisfied with my counsel in the way they acted. I wanted them to fight out the question on its merits.
162. You wanted it to be decided on its merits, and you did not want that point to be taken? Quite right.
163. Do you not think that if the "Sol" had ported her helm the collision might have been avoided? Yes; also if she had stopped sooner than she did. If the "Sol" had been a larger vessel she would not have hurt the "Alathea" very much, but being a small vessel she struck the "Alathea" low down like a torpedo, as it were.
164. Is it not another rule for navigating the harbour that all steamers must keep as close as possible to that shore which is on their starboard hand? Yes.
165. So that the "Alathea" would not be wrong in keeping as close to this wall as she could? Yes. If she had only gone slower it would have been all right.
166. I cannot see what difference it would make if she was going 7 miles an hour instead of 6 miles? It was more like 11 miles an hour than 6 miles.
167. Did not our side swear that the steamer did not go more than 6 miles an hour, and did not the jury believe our witnesses? The jury gave you a verdict for £600. I do not know what they believed.
168. *Mr. Wilks.*] Assuming that the people on board the "Sol" were aware that the "Alathea" passed the point daily at a certain given time, do you think that the people on board the "Sol" were justified in leaving before the "Alathea" passed? No; I am sure that if the "Sol" people had been aware that the "Alathea" was coming they would not have gone out.
169. If they had an idea that the "Alathea" was coming would they have hauled out? No; I think they would have remained where they were, and would have let the "Alathea" pass.
170. *Mr. Wood.*] With regard to your contention as to the speed of the "Alathea," do you think that evidence could have been produced to show that the "Alathea" was travelling at more than 6 miles an hour? Yes.
171. Did your side bring evidence to show that? Yes.
172. Did your counsel, when your case was going to the jury, give full force to that as one of the principal counts? I do not think they did.
173. In your opinion, when the case went to the jury, that point was not clearly placed before them? I did not think that our counsel paid sufficient attention to that particular point in putting the case before the jury.
174. As a rule, does not the time at which ferry boats are due at the wharves vary, probably, from 2 to 4 minutes? I think so.
175. Where was the "Alathea" coming from? From some point away up on the Parramatta River—I think, Hunter's Hill—and she was going to Circular Quay.
176. From what you know of those ferry-boats coming from such a distance, is it not possible for the time of their arrival to vary 2 or 3 minutes? Yes.
177. Do you say that it was owing to the suddenness and the rapidity with which the "Alathea" rounded this point that the collision occurred? Yes.
178. Had she come slower would your people have had time to get warning that she was approaching? Yes.
179. Do you admit that the fact of your engineer leaving his starting-bar and going to fire the vessel was negligence? Yes.
180. You have said that orders were given to go full speed astern;—had the Engineer been in his place, and if that order had been executed immediately, do you think that the collision would have been avoided? I think it is likely it would have been avoided.
181. With regard to the suggestion that the Marine Board should compromise, do you say that £700 was originally offered? That is what we intended.
182. Was the offer made? Instructions were given by us to our solicitors, but I am afraid that they did not send it to the solicitors for the opposite side in the straightforward way that we wished.
183. As far as you know, instructions were given for a compromise on those grounds? Yes.
184. Was the sum suggested by you intended to cover demurrage as well as damage? Yes; it was intended to cover everything.

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185. Was it intended as full compensation for the damage done and for the time lost? Yes; of course that was the way we viewed it.
186. Is that the usual course for the Marine Board to adopt? As a rule, if the Government contribute to a collision or accident of this sort it is better for them to compromise. Juries are more merciful to private individuals and companies than to the Government.
187. Your contention at that time was that you were to blame, and that the "Alathea" was also to blame? Yes; that there was contributory negligence both sides.
188. And that induced the Board to make an offer? Yes.
189. You have admitted that your boat was in the wrong, as well as the "Alathea," but would you say that, if your case had been fought out on the merits (that is to say, with regard to the rule of the road), you think you could have won your case? I think it is most probable that if we did not win it, it would have been given that both sides were in fault.
190. Do you think you could have clearly shown that the "Alathea" was a contributing party to the accident? Yes.
191. *Mr. Johnstone.*] Did you go into the details of the damages claimed before you authorised the offer of £700? Yes, to a certain extent; but the expenses were all incurred on your side without any reference to us, and then the claim was sent in.
192. Did you think that was what you considered was the maximum claim that ought to be allowed? Yes; we thought that £700 was over and above what you ought to get.
193. Having regard to what you said just now, assuming that the "Alathea" was not going more than 6 miles an hour, and if the "Bunya Bunya" was going in the same direction as the "Alathea," and close to the "Alathea" on the "Alathea's" port side, the only thing the "Alathea" could do was to stop and go astern;—supposing that is what she did, do you think you could ever have succeeded in that case? I do not know exactly what you mean.
194. The harbour rules say that if a steamer is going in a certain direction, and another steamer is coming on her starboard hand, and a collision looks inevitable, then the steamer which is on her starboard hand has to get out of the way;—now, there are only three ways of getting out of the way—going ahead, going astern, or diverting the course? No; there is another course open—that is, not to go so fast originally.
195. I ask you to assume that the "Alathea" was not going more than 6 miles an hour? Then I will answer yes.
196. Then, if that were proved to be the case, you could not have hoped to succeed? But the regulations say that the vessel that has the other on her starboard side has to keep out of her way.
197. You forget the other regulation which specifies a case where that cannot be done? That means dangers to navigation—where there are reefs, currents, and so on. It does not refer to straight navigation, such as that in Sydney cove.
198. Do you not recollect saying that on the facts we have assumed you would have done the very same thing as the captain of the "Alathea" did? Yes; I have said that I would probably have gone full speed astern.
199. *Mr. Wood.*] Have you any reason to suppose that the jury, in bringing in a verdict for £600, were influenced by the fact that they considered it was hard that the "Alathea" people should be beaten on a point of law, inasmuch as the people on board the "Sol" were a contributing party to the accident? I cannot give an opinion on that point.
200. Do you suppose that in assessing the damages they were guided by that consideration? I am rather inclined to think that they went into the actual merits of the case as to the damage done to the vessel. At the same time, I cannot say that that was the case. I think they went very carefully into the merits, and that they said, "Well, if the law is in your favour we will give you £600 as a fair set-off for the damages you have sustained."
201. Do you think that was the jury's estimate of the actual damage done? Yes; and a fair one.
202. How do you reconcile that with the offer which the Marine Board made of £700 which you say was a compromise? The owners of the steamer sent in a very heavy claim for £1,100 or £1,200. Amongst other things they sent in a claim for demurrage and also a claim for the hire of a vessel to do the work of the "Alathea." I thought they were unscrupulous in the claim they sent in, so we offered £700.
203. Do you claim that the amount of £700 which you offered was a compromise? Seeing that the other boat was in the wrong.
204. Therefore I take it you did not regard that as full compensation? Our boat sustained damage also.
205. Did you take that into consideration in making the offer? Yes; we took the whole of the circumstances into consideration.

Arthur Stanley Cowper called in, sworn, and examined:—

A. S. Cowper.  
28 Oct., 1896.

206. *Chairman.*] Are you manager of the Parramatta Steamship Company? Yes.
207. Do you know anything about the collision which occurred? I have no personal knowledge of it, because it took place before I was manager.
208. Do you know of your own knowledge the amount paid by the company for the injuries caused by the collision? We paid Mort's Dock Company £502, and there were a lot of incidental expenses. I have not made up the total. I suppose that, roughly speaking, we are about £1,000 out, and that does not include the costs.
209. *Mr. Wilks.*] Was that for putting the vessel in full repair? Yes.
210. *Mr. Johnstone.*] Was not your original claim £1,100? I cannot be sure without making up the figures, but it was about £1,000 or £1,100.
211. *Chairman.*] Do you know if any communication was received at any time from the Marine Board to the company offering to compromise? No, I never found anything of that kind.
212. *Mr. Wood.*] Are you quite clear as to the actual damage done to the vessel? Most of the accounts were paid before I went into the office. I settled up with Mort's Dock Company when I paid them £502.
213. Have you reason to suppose that £500 or £600 was spent in repairing the vessel and improving her? Yes; because I believe she was done up shortly before the accident.
214. *Chairman.*] Was it not considered by the company that Captain Donald, the former manager, was rather extravagant? That is merely a matter of hearsay.

215. Was it complained about that he caused too much to be done to the vessel when she was repaired? A. S. Cowper. No; the complaint, so far as I could learn, was with regard to the demurrage. While the boat was laid up, he contended that she would have been earning so much per day, and he charged that amount. I believe the Marine Board objected to that. 28 Oct., 1896.
216. Was that in connection with the claim made against the Marine Board? Yes.
217. *Mr. Johnstone.*] Do you know of any charge being included in the claim for the hire of another steamer to take the place of the "Alathea," while, at the same time, you claimed demurrage? No; I do not think Captain Donald got another boat. There was a small item of £5 5s. for the charter of a little boat called the "Snap Shot," which was used for going backwards and forwards to Mort's Dock.
218. Do you say that you paid Mort's Dock £500? Yes; Mort's Dock Company began to force us, and Mr. Franki was going to charge us interest.
219. In the claim which I hand to you is there any item for hiring a steamer to take the place of the "Alathea"? No.
220. Does this claim, which I hand you, contain all the particulars? Yes; everything that would be necessary to incur in fitting up a boat like the "Alathea." I think the charge for demurrage is quite right. Two holidays are put down in the list at £30 each. I know on some holidays we earn £40 with a boat like the "Alathea."

THURSDAY, 5 NOVEMBER, 1896.

Present:—

Mr. WOOD,

Mr. WATSON,

Mr. DAVIS.

W. H. B. PIDDINGTON, Esq., IN THE CHAIR.

J. W. Johnson, Esq. (of Messrs. Johnson, Minter, Simpson, & Co., solicitors), appeared for the Parramatta River Steamers and Tramway Company (Limited).

John Puckeridge called in, sworn, and examined:—

221. *Chairman.*] Are you in the employ of the Marine Board? I am boatswain in charge of the shed where the Marine Board launches are kept. J. Puckeridge. 5 Nov., 1896.
222. How long have you been in the employ of the Marine Board? About twenty-six years.
223. Do you remember the collision between the "Sol" and "Alathea"? Yes.
224. Were you in charge of the boat on that occasion? No, I had charge of the boatshed.
225. Who takes instructions from you? Any of the boatmen.
226. Do you refer to the captains of the launches? They are called coxswains, but they hold master's certificates for the harbour.
227. On this occasion did you get instructions from the Marine Board that a launch should proceed to Princes Stairs? Yes, for Mr. Ramsay, the Curator of the Museum.
228. Just prior to that boat starting, did young Mr. Hixson and Mr. Cape come down to the shed? Yes.
229. Did they come to you? They came through the boat-shed; they did not come direct to me, they saw me and spoke to me.
230. Did they ask if the boat would take them over to Blue's Point? The boat was in order to go for Mr. Ramsay at a quarter after 9 o'clock. They came there a little after 9 o'clock and told me they were going to North Sydney, and that as the boat was going away would I give them a passage over as they were going to the Hawkesbury with Mr. Thomas Dibbs. The boat started away with them.
231. Did the collision occur shortly afterwards? Yes.
232. Has it been the habit of these gentlemen or of others to take the boat or to ask permission for a boat to be used in that way? No; but it lies in my option to do that if a boat is going to a certain part of the harbour. When the boat has been going in a certain direction people have asked me if they could have a passage.
233. *Mr. Watson.*] Have those been unofficial persons? No; only in cases such as Captain Hixson's son.
234. But these gentlemen were not official persons? No; it is just this way: No doubt I hurried them away. There was very little time; it was 5 or 6 minutes past 9; the launch had to be at Princes Stairs at a quarter past 9, but I knew that Mr. Ramsay would not be there punctually. I knew very well that if I had gone into the little office and rung up Captain Hixson on the telephone he would have consented to my letting the boat go.
235. *Mr. Wood.*] Have you any general instructions to act in that responsible way yourself;—did you do this believing that Captain Hixson would acquiesce in it if you consulted him? Yes; I have not the slightest doubt about that.
236. As a matter of fact, had it been allowed before? They have been on the boat before, but not without the permission of their father.
237. *Mr. Johnson.*] Would you have taken anybody over had they asked you for a passage to North Shore? Decidedly not.
238. Then why did you give orders for these two gentlemen to be taken to North Shore? It is just this way: I look upon Captain Hixson as the Master or Superintendent of the Marine Board. He is President, and this gentleman being his son, and I being very familiar with him (having known him many years I am very familiar with him) granted him the passage.
239. Then you simply gave him a passage because he was Captain Hixson's son? Yes.
240. And also his friend? Yes. I knew that if I communicated with Captain Hixson he would without doubt have consented.
241. *Mr. Watson.*] Were you guided in that opinion by the fact that previously you had the consent of Captain Hixson for such a thing being done? Yes—his son having the launch.
242. In other words, you had given the same permission to his son on previous occasions, and Captain Hixson knew it and had not objected? Yes; Captain Hixson had given permission.
243. Was that the first occasion on which you did it on your own authority? Yes; I believe.
244. *Mr. Johnson.*] I suppose you had given authority on previous occasions? No.
245. Never? I do not believe I ever did.

- J. Puckeridge, Esq.  
5 Nov., 1896.
246. *Chairman.*] As far as you know, since the occurrence of this collision have the Marine Board boats been used for the same purpose as this boat was used on that morning? No; unless they have been used by Captain Hixson.
247. Did you see the collision? No; the boats were out of my view, but I heard the smash.
248. *Mr. Johnson.*] Supposing that some gentleman whom you knew very well had gone there, and you told him you would put him across to North Shore in the launch, would you consider that you had authority to do that? Yes, providing it was not in the hours when the office was open.
249. You would do it if it did not interfere with business? No, if the head office was not open (that is the Marine Board office) I would use my own discretion whether I would do it or not.
250. If you did so, would you consider you had authority to do it? If it was a member of the Government or any official person, but not any private person. If I did so, the responsibility would be entirely mine.
251. What I want to get from you is, in your own belief did you consider you had authority to tell the coxswain that he was to take these gentlemen over to North Shore? That is rather a difficult question to answer.
252. Would you tell the coxswain to do that unless you thought you had authority? No, I would not.
253. *Mr. Watson.*] Were any instructions ever given that you ought to do this, or use your own discretion in matters of that kind? No, on Sundays and holidays, when the office is closed, the boat-shed is entirely under my control, to use my own discretion in carrying out the work.
254. On this occasion the Marine Board office was not closed? It happened on a week-day morning.
255. Since this collision occurred have there been any unofficial persons travelling on the boat? No; not that I am aware of, only people who are connected with the Marine Board Department.

TUESDAY, 10 NOVEMBER, 1896.

Present:—

MR. DAVIS, | MR. WADDELL,  
MR. WILKS.

W. H. B. PIDDINGTON, Esq., IN THE CHAIR.

J. W. Johnson, Esq. (of Messrs. Johnson, Minter, Simpson, & Co., solicitors) appeared for the Parramatta River Steamers and Tramway Company (Limited).

Henry George Menzies sworn and examined:—

- H. G. Menzies.  
10 Nov., 1896.
256. *Chairman.*] Are you captain of the "Alathea"? Yes.
257. Were you captain at the time of the collision between the "Alathea" and the "Sol"? Yes.
258. Have you held that position since? I am not on the "Alathea" at present, but I am still in the employ of the Company.
259. *Mr. Johnson.*] Are you well acquainted with the harbour regulations? Yes.
260. Were you in the habit of passing the spot where the collision took place at the same time every morning? Yes; pretty well, with a minute or two difference.
261. When did you slacken speed? Just when we got to Dawes Point where the red light is.
262. At what pace were you going? At 6 knots an hour after slackening speed. The standing orders are to always slacken speed after passing Dawes' Point, because there is so much traffic that there might be an accident.
263. When you saw that a collision was inevitable, why did you not starboard your helm? The "Bunya Bunya" was just on my port quarter; you could just see daylight between my steamer and her. [*Witness here described on a chart the position of the vessels.*]
264. If you had starboarded your helm, would you have been run into? I was in danger on both sides. As soon as I saw what was going on, I ordered the boat full speed astern, and the order was obeyed immediately. I was a length and a half on the west side of the red buoy marked on the chart, when I saw the "Sol" coming out, and then I rang the order full speed astern, which was obeyed immediately.
265. When the collision took place, was there any way on your steamer? No: she was at a standstill. She was only going slow.
266. If, instead of starboarding her helm, the "Sol" had put her helm to port, would the collision have happened? If the "Sol" had not starboarded, but had kept straight ahead, the collision would not have occurred.
267. Had the "Sol" plenty of time from the moment that you first bore in sight to have stopped her engines and reversed, if the man had been at the starting-bar? Yes; there would have been no collision.
269. *Mr. Davis.*] Had the man who was supposed to be in charge of the "Sol" a hold of the helm? I could not swear whether he had, because there were two men there. There was the Marine Board man on the starboard side, and there was a gentleman on the port side.
270. Who was that gentleman? Captain Hixson's son.
271. Did any evidence come before the Court, showing that Mr. Hixson, and not the man, really had taken the helm in hand? There was something said about that, but it did not come out properly.
271. Was it hushed up? Yes; I have since heard that he was at the helm, and that the driver was down below shaking her up.
272. Was there anybody else on board? That is all I saw. There might have been more, but I did not see them.
273. Was the man in charge of the boat standing close to her helm? There were two close together, and I could not tell who was steering; there was one on each side.

James William Johnson, recalled and further examined :—

274. *Chairman.*] Have you an article that was published in the *Daily Telegraph* which you wish to put in as fair comment Yes; also an article from the *Evening News*. [*Vide Appendices C 1 and 2.*]

275. *Mr. Davis.*] Do those articles contain some special remarks made by Mr. Justice Windeyer? No; they are comment on the decision of the Full Court, putting the whole case very clearly. I also put in a report which appeared in the *Sydney Morning Herald*, of 13th September, 1894, giving the summing up of the Judge on the trial, and the questions he put to the jury, with their answers. [*Appendix C 3.*] I wish to say this with reference to Captain Hixson's statement as to the conduct of the "Sol's" case by counsel for the Marine Board: I say that counsel went most fully into the facts of the collision from their point of view, and they endeavoured to show that the "Sol" was blameless, and that the "Alathea" was solely to blame, and in my opinion it was only when they broke down in that contention that they resorted to this highly technical point that the "Sol" was not on Government duty. To show how fully they went into that question I hand in the following list of witnesses called by the plaintiffs, and also the list of witnesses called by the defendants:—Witnesses for the plaintiff: Henry Menzies, master of "Alathea"; Frederick Styles, engineer; M. B. Marcey, deck hand; R. M. Pearson, passenger; E. H. Crossman, passenger; T. R. Cooper, passenger; W. S. Dowel, M.P., passenger; A. S. Loveridge, passenger; B. H. Greaves, manager of Parramatta Steamers Company; Charles Cape, passenger on the "Sol"; J. M. Banks, marine surveyor; John Barber, foreman shipwright; John Dick, foreman engineer; A. P. Richards, foreman painter; W. T. Peters, engineer; Joseph Silva, master s.s. "Ivy"; Thomas Donaldson, foreman, Mort's Dock; Captain Hall, marine surveyor; Captain Grainger, marine surveyor. Witnesses for the defendant: Ernest Charles Younger, passenger on "Bunya Bunya"; Joseph Kendall, hand on "Bunya Bunya"; Robert Godbold, hand on "Bunya Bunya"; Charles Cape, passenger on "Sol"; William Henry Keys, Alexander Robertson, William Kendall, John Sherry, John Puckeridge, boatswain on "Sol"; Francis Hixson, Chairman Marine Board; William M'Critchie.

J. W.  
Johnson.  
10 Nov., 1896.

277. *Mr. Davis.*] If the "Sol" had belonged to a private company, or a ferry company, or was privately owned, would the company or owners have been liable for the damage done to the "Alathea," seeing that the jury brought in a verdict of guilty against the "Sol"? Yes, they would have been certainly liable.

277. Would they have been able to shelter themselves under the plea that the vessel was not on duty? No; as a matter of fact the coxswain of the "Sol" is liable to us at present.

278. When a collision occurs at sea, does the injured person sue the master of the ship? No.

279. Is it not generally the owners of the vessel who are sued and who have to pay damages? Yes.

280. *Chairman.*] There are some questions which you wish me to ask you,—was it proved at the trial that the "Alathea" passed the spot where the collision took place almost at the same time every morning? Yes.

281. Was it proved that the "Bunya Bunya" was steaming into the cove close to the "Alathea" on her port side, the "Alathea" being a little ahead of her? Yes.

282. Was evidence on the part of the Marine Board gone into to prove that the "Sol" was in the right, and that the "Alathea" was in the wrong? Yes, most fully.

283. Was £700 ever offered by the Marine Board to the owners of the "Alathea"? No; I was astonished when I heard Captain Hixson say that he had instructed the solicitors for the Marine Board to offer us £700. That was the first I had ever heard of it.

284. Are you quite sure that that offer was never made? I am quite sure it was never made, and I am quite sure that if it had been offered it would have been accepted, rather than have gone into this litigation. I may tell you that we did get a letter from Messrs. Sly and Russell, asking us the lowest sum we would be prepared to accept on behalf of the owners of the "Alathea," and we wrote back saying that we would accept £1,000, but we never said we would not accept £700, and it was never offered to us.

285. Do you not know of any letter ever being written by the Secretary of the Marine Board to the Parramatta River Steamers Company? I am sure it was not. The whole of the correspondence at that time had been relegated to the solicitors.

286. We have in evidence a copy of the letter written by the Secretary of the Marine Board, and addressed to the Under Secretary for Finance and Trade? Perhaps so, but that never reached us. I should like to see it. The memo. I refer to is as follows:—

The Secretary, Marine Board, to the Under Secretary for Finance and Trade.

25 September, 1894.

This case arose from the collision which took place some months ago between the "Sol" and the Parramatta steamer "Alathea." The collision was to a great extent the result of accident, and the Board endeavoured to settle it amicably; but the demands of the "Alathea" party were so outrageous that it was thought better to meet an action in the Supreme Court than to yield to them. The Board did not, however, wish to plead non-liability, and only sanctioned the action of their counsel with a view of protecting the public interest against the excessive demands of their opponents. With the point conceded by the jury of the non-liability of the Board better terms will now be made with the owners of the "Alathea," and something like a fair settlement will be arrived at.

By Order,—

G. S. LINDEMAN.

287. Do you wish to say anything with regard to that? I never saw that, or never heard of it until to-day. That was written after the verdict. I have no doubt that from what Captain Hixson has said that the solicitors for the Marine Board were instructed to offer us £700, but they never did so. He explained himself that he feared they had made some bungle over it. With regard to the fact that Captain Hixson has stated that the Marine Board authorised the sum of £700 to be offered to the owners of the "Alathea," I point out that if the Government now were to see its way to pay us the amount of our verdict, viz., £600, and the amount of the costs that the owners of the "Alathea" were put to, say £300, and taking into consideration that the Government have paid the costs of the solicitors of the Marine Board, amounting to, say, £300, the Government would now only be paying £1,100 altogether, which would only come to £500 more than if they had paid £700 at the time, and no doubt at that time they would have had to pay the Marine Board's solicitors a considerable sum for costs up to that date.

## COLLISION BETWEEN THE "SOL" AND "ALATHEA" STEAMERS.

## APPENDIX.

## A1.

[To evidence of James Wm. Johnston, Esq., 22 October, 1896.]

## JUDGE'S NOTES.

In the Supreme Court of New South Wales.—No. 3 Jury Court. Cor. Windeyer, J.—19th September, 1894.

The Parramatta River Steamers and Tramway Co. (Limited), v. Hixson.

Mr. Want and Dr. Sly, by Messrs. Johnson, Minter, and Simpson, for plaintiffs.

Mr. Bruce Smith and Mr. Raleton, by Messrs. Sly, Hamilton, and Russell, for defendants.

*Captain Francis Hixson*, President of Marine Board and defendant in this action: The "Sol" is under my control and under the control of the Marine Board; the Marine Board employees run her; I knew about her on that day; I did not know of her going to carry my son and Mr. Cape (the solicitor) to Blue's Point; I had not been asked to give authority to take them anywhere; The boat was authorized for the service of Dr. Ramsay, the Curator of the Museum; the boat was ordered for Dr. Ramsay for a certain purpose, and the boatswain in charge of the establishment allowed the two young men to go in her via the service on which she was engaged; she was starting on her expedition to take Dr. Ramsay; Blue's Point would be out of her course on her journey for Dr. Ramsay.

*Cross-examined*: The "Alathea" ought to have kept out of the way. (See the Eighteenth Article.) She could have done so by stopping or starboarding; the "Sol" ought to keep her course; the "Bunya Bunya" should keep out of the way; the Marine Board entrusted the steamer to the boatswain under certain conditions; special orders are given for these duties and others are prepared as matters of routine; the boatswain is the executive officer of the Board; I never took any objection to the boatswain letting the boat be used in this way; it is no part of a boatswain's routine duty to send the boat with private persons across the harbour, but it is often done; I don't split hairs with the man in charge of the boat; I think the man might assume, from his mode of acting before, that he had authority to let the boat be used in this way.

*Robert Godbold*, master of the "Sol": We backed out towards Circular Quay, and came round on a port helm till her head was pointing just outwards of the red buoy, going between 3 and 4 knots; the full speed is between 6 and 7; we were going half-speed when going towards the buoy; I was in uniform standing on starboard side of wheel, I was steering and had charge of the boat; I left the wheel before the collision and pulled a fender off in the port bow, my helm was steady and required holding, I went 13 feet to do it, 26 feet there and back from the wheel; I first saw the "Bunya Bunya's" funnel showing over the wall on the Point, she would be then 120 yards from the buoy; I did not see the "Alathea" then, I kept my course, as I got back to the wheel I saw the "Alathea's" awning over the wall; she was inside the "Bunya Bunya," and the "Bunya Bunya" was half a length astern of her; as the "Alathea" came along, I saw she was altering her course to starboard on her course to the Quay; I gave the order to stop, I turned round and saw the engineer was employed somewhere else, and I ran aft and turned off the steam; my helm was then steady, I went 6 feet to do it, I eased the steam, I did not turn it right off, I turned it one turn, and turned it half-off; we were going 3 knots when I eased her; I lost about five seconds in going to ease her; I think the "Alathea" was going between 8 and 9 at the moment of the collision; the "Alathea" was about half a boat's length to the south of the buoy, her stern would not be clear of the buoy; the buoy was about her midships; way was not off her when I struck her, she was going about 4 when I struck her; the "Bunya Bunya" was on the "Alathea's" port quarter when I struck the "Alathea," and about half a length astern of her, and one and a half outside her; the "Alathea" would have run no risk to herself if she had starboarded and gone to port; having me on her starboard I assumed that she would keep out of the way, and I kept my course; I received orders from the boatswain to take young Mr. Hixson and Mr. Cape across and land them at Blue's Wharf, and go from there to Princes' Stairs to pick up Mr. Ramsay of the Museum, and place myself under his orders, I certainly would not have taken the course I did if I had gone direct to Princes' Stairs, and I should have gone directly in the opposite direction.

I should have cleared the long jetty if I had gone direct to the Princes' Stairs and going not the buoy but nearly parallel to the course of the "Alathea;" the effect of the collision was that the "Alathea" was still going ahead and she dragged us round about till we—

*Cross-examined*: Mr. Puckeridge is the boatswain from whom I take my orders; I altered my helm when she was a quarter length past the buoy; when I saw she was crossing my course, I put my helm hard a starboard; I knew she was coming to the Quay, and I kept my course at right angles to her till I was about twenty yards from her; I knew where the two boats were going when I saw the funnels and awning over the wall; had she kept her course I could not have caught her; the engineer was down firing when I ran aft and no one was in charge of the vessel; I thought there was risk before I jumped aft to turn off the steam; as soon as I saw her bows coming round and altering her course; he was not altering his course in reference to me, but simply coming round the point on a port helm to get to the Quay; I then thought there was risk of collision; that was ten or twelve seconds before I jumped to the throttle valve; she was seventy or eighty yards off when I saw there was risk of collision, and she was just coming in sight round the wall; I kept my course, and shortly after gave the order to stop; I saw there was risk of collision; I kept my course and did not go astern; if going half speed in the "Sol" I would not swear I could stop her in thirty yards; I think I could bring her up to a standstill in forty yards; we might have minimised the crash, but could not have avoided the collision by stopping altogether; in my opinion we would not have avoided the collision if we had stopped when I called out and no one was there.

*John Puckeridge*, boatswain of the Marine Board boats: On day of collision my instructions to the "Sol" were for 9-15 at Princes' Stairs for Dr. Ramsay, of the Museum, to go trawling in the harbour; before that Mr. Hixson and Mr. Cape came and asked me to give them passage to Blue's Point; I had no authority from the Marine Board to take these gentlemen to Blue's Point—I did that on my own authority; going to Blue's Point is not in the journey I was ordered to send the boat—it is entirely in an opposite direction; I had no general or special orders to take these gentlemen; it was a distinct journey to the one I was directed to send the boat on: it was young Hixson; he has been in the boat before; the boat was to finish by picking up Mr. Ramsay; I have often taken young Hixson before with his consent; Hixson has given me orders verbally and in writing for the general managing of the boats; I sent the boat with the gentlemen entirely on my own authority.

*Captain Hixson*: I do not consider it safe for the "Bunya Bunya" and the "Alathea" to come round the Point at nine miles an hour; there is a good deal of traffic running in and out from the wharfs; there is a proclamation prohibiting a speed of over six knots to the hour south of the buoy; if the captain had gone inside the buoy and an accident had occurred, then he would have lost his certificate; the "Sol" did the proper thing in keeping her course seeing these vessels coming as they were; the "Alathea" would not have taken a safe course in continuing as she went; the "Alathea" should have kept out of the way by stopping, or reversing, or starboarding her helm, and so giving the "Sol" room to clear the buoy; if stopping did not give her time to clear she should have starboarded her helm; two blasts on the whistle would have informed the other steamers the steamer was starboarding; putting in new engines of double the power would probably tear the ship to pieces; I do not think it is a proper thing for the engineer to go below just when she was straightening up; I think it is an improper thing to leave the bar unless he sees there is no danger; I do not think it was the duty of the master to go on when being able to stop his vessel in forty yards when the danger was eighty yards off; his duty is to stop under such circumstances if it appears to him the other ship is not going to get out of the way.

## FINDINGS OF JURY.

- A. Was the master of the "Sol" on a trip authorised by the Marine Board at time of collision? No.  
 1. Having regard to the locality and probable contingency of a vessel coming round the point as the "Sol" was going out, was it negligence not keeping a man at the engine to stop her till she was fairly out in the open harbour? Yes.  
 2. Was the collision owing to the "Sol" having no one at the engine when it became necessary to slacken speed, and to her not stopping entirely when the master eased her? Yes.

3. Did the "Sol" infringe regulation 18 as to slackening speed and stopping? Yes. If the "Sol," by infringing regulation 18, could possibly have contributed to the collision, then she is in default, unless she can show that her infringement of the rule could not possibly have done so. The plaintiff, however, is not entitled to recover if the "Alathea," by her own negligence or breach of the regulation as to keeping out of the way, contributed to the collision.

4. Did the "Alathea" do all she could to avoid the collision by keeping out of the way, having regard to her own safety with reference to the proximity of the "Runya Runya"? Yes.  
Verdict for plaintiffs, £600.

A. J. TRAILL,  
Associate.

## A 2.

[To evidence of James Wm. Johnston, Esq., 22 October, 1896.]

### FULL COURT JUDGMENT.

Parramatta River Steamers and Tramway Company (Limited) v. Hixson. New Trial Motion.

HIS HONOR the Chief Justice (Sir Frederick Darley), after setting out the facts of the case, said, "The defence raised by the Marine Board was, that those in charge of the boat, although the servants of the Board, and paid as being servants, were not using the vessel as in the employment of the Board, but for private purposes, that is, for bringing some gentlemen from one side of the harbour to the other, and the jury found that this vessel was not on a trip authorised by the Board at the time of the accident, and it is not possible for the Court to go outside the finding of the jury as to whether the boat was or was not on a trip authorised by the Board, and the law is clear on the subject, that if a servant is not acting, in using a steamer, carriage, or horses, or anything likely to cause mischief or damage, in his master's employment, but is carrying out a scheme or frolic of his own, or of a friend, and an accident occurs through his negligence, the master is not responsible, and it is impossible for the Court to set aside the finding of the jury; and it seems to me that the verdict in the case must be set aside, and, according to an arrangement made, a verdict entered for the defendant, and I must say it is a case of extreme hardship for the plaintiffs; and it is well known that the Marine Board had allowed this steamer to be used for purposes which, strictly speaking, did not fall within the Act of Parliament, and, under these circumstances, it will be a question for the Government to consider by and by, whether the plaintiffs are not entitled to consideration for damages." And

His Honor Sir William Windeyer said, "I entirely agree in thinking that the verdict must be set aside and a verdict entered for the defendant; and I could not help saying that the evidence showed that the plaintiffs were in no wise in the wrong; that they received this injury at the hands of a boat managed by Government officials, sustaining considerable damage; and I thought it better, in the first place, that the whole case should be tried by a jury, to see whether there was any contributory negligence on the part of the plaintiffs which would disentitle them to damages, and if they were proved to be entirely in the right, they might be in a position to make such representations to the Government as they thought fit. And there is no doubt that this boat, at the time of the accident, was not upon the strict business of the Marine Board, and for that reason, the case coming so clearly as it does within the numerous decisions given by the Court on this point, there is no escape from setting aside the verdict; and I agree with the Chief Justice, that it will be a matter for the consideration of the Government whether reparation should be made the plaintiffs because of the dereliction of the Board in allowing the boat to be used in this way." And

His Honor Sir George Innes: "I agree entirely, and I have nothing to add."  
The rule was granted with costs and a verdict entered for the defendant.

## B.

[Appended by the Committee.]

25 September, 1894.

THIS case arose from the collision which took place some months ago between the "Sol" and the Parramatta steamer "Alathea."

The collision was to a great extent the result of accident, and the Board endeavoured to settle it amicably; but the demands of the "Alathea" party were so outrageous that it was thought better to meet an action in the Supreme Court than to yield to them.

The Board did not, however, wish to plead non-liability, and only sanctioned the action of their counsel with the view of protecting the public interest against the excessive demands of their opponents. With the point conceded by the jury of the non-liability of the Board, better terms will now be made with the owners of the "Alathea," and something like a fair settlement will be arrived at.

By order,  
GEO. S. LINDEMAN.

The Under Secretary for Finance and Trade.

## C 1.

[To evidence of J. W. Johnston, Esq., 10 November, 1896.]

[Extract from *The Daily Telegraph*, Thursday, 9 May, 1895.]

### THE SOL-ALATHEA CASE.

THE difficulty of making any general principle of law fit every individual case to which it applies, so as to do equal justice all round, was illustrated in the Supreme Court yesterday, where a decision had to be given which even the Bench acknowledged as unfair to the parties concerned. The case referred to was that of the Parramatta Steamship Company against the Government, in which damages were claimed for loss sustained by a collision between one of their steamers and the Marine Board launch. It was an appeal to the Full Court from a verdict of a jury awarding the plaintiffs £600, and although the equities of the case fully sustained that award, and were not questioned, on a purely technical point the verdict had to be reversed. The Government launch was found to be solely responsible for the collision; there was no contributory negligence on the other side, while, had ordinary care been taken by the Marine Board's servants, the company's steamer would have passed uninjured. A clearer case for damages, therefore, could not be made out, yet, virtually speaking, no damages are legally recoverable. The point was taken that when the collision occurred the launch was not employed upon Government business, and this being sustained by the jury's verdict, the Full Court, on appeal, found itself bound to rule that the action had been brought against the wrong party. Under the circumstances, it seems that technically no one is liable but the man in charge of the launch, and as matters stand, the injured company have no resource but to seek whatever satisfaction they may be able to get out of him.

The law, as laid down yesterday, makes it clear enough that the owner of a steamer or conveyance of any kind is only responsible for damages arising from mismanagement while it is being used under his authority and on his business. If any of his servants take it out for any other purpose, everything is at their own risk. No doubt this principle of law works out equitably in the main, but we have here the proof of how liable it is to be unjustly strained. There is always more or less difficulty in deciding the precise point at which the responsibility of the owner ends and that of the servant begins, and it is from mistakes in doing so that injustice arises. Being a question of fact, its decision rests with the jury. Whether the Bench would have decided as did the jury in this case appears, from the tenor of the Judge's remarks, to be doubtful, but, right or wrong, it bound them all the same. In our opinion it was distinctly wrong, and the Government, which ought not to pettifog itself out of any just obligations, should decline to take advantage of a verdict given upon such grounds.

When the Marine Board launch cut down the Parramatta steamer she was engaged in taking the son of the president and another private gentleman across the harbour. As the Board gave no express authority for her doing so, the jury held that the trip was not being made upon Government business. What is that but hair-splitting? The Government must have given at least tacit authority for the use of the launch, if they did not make a departmental minute to that effect. In the evidence it was admitted that discretion was allowed to the master of the launch in the matter of allowing private persons to use her. Besides, the Government willingly paid the expenses of the trip, from which it is fair to assume that they considered it one coming within the general purposes for which the launch is kept. The launch, it appears, has no special routine of work; she is there to do just what comes in the way. If taking the president's son across the harbour is one

one of the things which should not come in the way, it was somebody's business to see that the launch was not used for that purpose. It was neglect of this duty which caused the launch to be where she was when the collision occurred, and for that neglect the Government must take the moral responsibility. The result of it is a serious loss to private individuals—a loss assessed by a jury at £600. They have, therefore, an undeniable claim for compensation, and although law may be satisfied, justice will not until it is paid.

## C 2.

[To evidence of *J. W. Johnston, Esq.*, 10 November, 1896.]

[Extract from *Evening News*, 9 May.]

THE *Sol-Alathea* affair, decided yesterday, was emphatically one of those hard cases which make bad law. The "*Sol*," the Marine Board launch, some months ago ran down, through the fault of those on board, the "*Alathea*," belonging to the Parramatta Steamer Company, doing damage to the amount of £600. At a first trial it was held that the "*Sol*," being Government property and manned by Government servants, the Government would have to pay this £600. The Government objected to this, and appealed to the Full Court. The Full Court yesterday decided, with regret which was openly expressed (the judges holding that the case was one of great hardship, and that the Government should consider whether it should not make compensation), that the "*Sol*," when on her ramming expedition, was acting in an unofficial capacity.

It appears that the "*Sol*," on the day when she encountered the "*Alathea*," was authorised for the service of Dr. Ramsay, the curator of the Museum; but before taking up Dr. Ramsay, the boatswain in charge allowed Mr. Hixson, son of Captain Hixson, President of the Marine Board, and another gentleman to take passages to Blue's Point. It was during this run that the "*Alathea*" was struck. Blue's Point was out of the course which the "*Alathea*" would have had to follow had she gone to fetch Dr. Ramsay only, and that is where the unofficial element comes in.

But Captain Hixson deposed at the first trial that the boatswain was the executive officer of the Marine Board; that he (Captain Hixson) never took any objection to the boatswain letting the boat be used in the way it was on the day of the collision; and that he (Captain Hixson) thought that the boatswain might assume that there was authority to let the boat be used as it was. This seems to make it plain that in every ordinary and non-hair-splitting sense the boatswain acted under authority and as a Government servant.

The decision to the contrary opens up no end of complications. It would render Government steamers free half their time to do what damage those on board chose; for unless those on board were strictly executing orders no one could get compensation out of the Government for their freaks. The irregular passengers certainly would not be liable; and though the boatswain in charge might be liable, boatswains generally have not any funds. The Government should not take advantage of quibbles.

## C 3.

[To evidence of *J. W. Johnston, Esq.*, 10 November, 1896.]

[Extract from *Sydney Morning Herald*, 13 September, 1894.]

No. 3 Jury Court.—(Before His Honor Mr. Justice WINDEYER and a jury of four.)

PARRAMATTA STEAMER AND TRAMWAY COMPANY v. HIXSON (PART HEARD).

MR. J. H. WANT, Q.C., with Dr. Sly, instructed by Messrs. Johnson, Minter, Simpson, & Co., for the plaintiffs, the Parramatta River Steamers and Tramway Co. (Limited); and Mr. Bruce Smith, with Mr. Ralston, instructed by Messrs. Sly, Hamilton, and Russell, for the defendant, Francis Hixson, the President of the Marine Board of New South Wales. This was a claim for £1,500 damages, for injuries done to the plaintiff's steamer "*Alathea*," through the alleged negligence and unskilful navigation of the defendant's servants, who were in charge of the steam launch "*Sol*." The defence was that the collision was due to negligence on the part of the plaintiff's servants, and that at the time of the accident the "*Sol*" was not being used in the service of the Marine Board, and the master was at the time acting entirely on his own responsibility.

His Honor, in summing up, said the case had occupied some time, but not longer than the merits warranted, inasmuch as it was a case relating to an accident in a portion of the harbour where there was a large amount of traffic. He was bound to say that the evidence was rather more clear in this case than it was generally in cases of marine collision. If the collision was brought about by the default of the defendant Board, and the collision was not contributed to, or, in other words, was not brought about by any negligence on the part of plaintiff's boat, then the defendant was bound to pay such damages as were occasioned to the plaintiff's boat, and those damages were said to be £650. If they came to a conclusion in favour of the defendant, there was an end to the question of damages. Then they came to the question, which of the two vessels was in fault when the collision took place. The duties of the masters of vessels when in danger of collision had been clearly pointed out by the Legislature, and the regulations made under an Act of Parliament, which precisely defined what the duties of masters of vessels were, in order to relieve them of much difficulty in a moment of danger, and in order to relieve tribunals who had to decide cases arising out of collision, as to whether the proper thing had been done by those in command of the different vessels at the time of collision. Before he proceeded to go into the question of the respective duties of the two ships, there was one question he would ask them to consider, in order that the opinion of the Court might be afterwards taken on the matter. The defendant had set up a defence that at the time of the collision the "*Sol*" was not engaged upon any business authorised by the Marine Board. This defence was one founded on the principle that if a servant did injury to another person when engaged about some business not his master's business, the master was in no way responsible. They need not consider whether the application of this principle to the accident was altogether reasonable or in accordance with this principle; all they had to consider was what was the law. It might appear to some that an employer should as much be bound by the wrongful act of the servant whom he trusted with a dangerous machine if he was using it on his master's business or not. The cases on this point varied so much in the circumstances, and such fine distinctions had been drawn in different cases as to when a servant was or was not in the employ of a master, that he thought it desirable to refer this matter to the Supreme Court. If he ruled erroneously on the point, the only result would be that the case would have to be tried over again, and there would be great expense to the parties; and therefore it was thought better to reserve the point of law to the Court on such finding as the jury would give. Even should the Court be of opinion that the Marine Board was not liable under the circumstances of this case, it might be that if the jury should come to the conclusion that there was negligence on the part of the servants of the Marine Board in the management of this steamer, even though the Court held that the plaintiff had no cause of action, the Government might think it right to indemnify the plaintiff for the loss sustained. The first question he would put to the jury was this—was the master of the "*Sol*" on a trip authorised by the Marine Board at the time of the collision? He pronounced no opinion whatever on the question of law, at the request of the parties. The law with reference to the duty of vessels when there was risk of collision was very clear and positive. The law as laid down for a steamship when approaching another ship so as to involve risk of collision was that it should slacken speed, or, if necessary, stop and reverse. The law was that the vessel which disobeyed so cardinal a rule was to be held in fault. The defendant had set up a defence of contributory negligence. The law of contributory negligence was that a person could not recover damages for an accident which had been brought about by his own negligence. His Honor submitted the following questions to the jury:—1. Was the master of the "*Sol*" on a trip authorised by the Marine Board? 2. Having regard to the locality and the probable contingency of the "*Sol*" meeting a vessel coming round the point, was it negligence on the part of those in charge of her not keeping a man at the engine to stop her till she was fairly out in the open harbour? 3. Was the collision owing to the "*Sol*" having no one at the engine when it became necessary to slacken speed, and to her not stopping entirely when her master eased her? 4. Did the "*Sol*" infringe Regulation 18 as to slackening speed and stopping? 5. Did the "*Alathea*" do all she could to avoid the collision, having regard to her own safety? His Honor said that if the "*Sol*," by infringing Regulation 18, could possibly have contributed to the collision, then she was in default unless she could show that her infringement of the rule could not possibly have done so. The plaintiff, however, was not entitled to recover if the "*Alathea*" by her own negligence or breach of the regulation as to keeping out of the way contributed to the collision.

The jury returned a verdict for the plaintiff for £600. They answered the questions as follows:—1. No. 2. Yes. 3. Yes. 4. Yes. 5. Yes.

1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

CONVENTION BETWEEN GREAT BRITAIN AND JAPAN.  
(DESPATCH RESPECTING.)

*Printed under No. 1 Report from Printing Committee, 21 May, 1896.*

The Treasury, New South Wales,  
12th May, 1896.

His Excellency the Governor directs the publication, for general information, of the following copy of a Despatch from The Right Honorable the Secretary of State for the Colonies, enclosing a copy of a Convention between Great Britain and Japan, signed at Tôkiô, 16th July, 1895, supplementary to the Treaty of Commerce and Navigation between the two countries of 16th July, 1894.

G. H. REID.

(Circular.)

Downing-street,  
17th February, 1896.

Sir,

With reference to my predecessor's Circular Despatch of the 31st December, 1894, I have the honour to transmit to you, for publication in the Colony under your Government, a copy of a Convention between Great Britain and Japan, signed at Tôkiô, 16th July, 1895, supplementary to the Treaty of Commerce and Navigation between the two countries of 16th July, 1894.

I have, &c.,

J. CHAMBERLAIN.

The Officer Administering

the Government of New South Wales.

**SUPPLEMENTARY CONVENTION BETWEEN GREAT BRITAIN AND JAPAN RESPECTING THE DUTIES  
TO BE CHARGED ON BRITISH GOODS IMPORTED INTO JAPAN.**

Signed at Tôkiô, 16th July, 1895.

[Ratifications exchanged at Tôkiô, 21st November, 1895.]

WHEREAS, by the Protocol signed at London on the 16th July, 1894, it was agreed between the Government of Her Britannic Majesty and the Government of His Majesty the Emperor of Japan that the *ad valorem* duties of the Tariff annexed to the aforesaid Protocol should, so far as might be deemed practicable, be converted into specific duties by means of a Supplementary Convention, to be concluded between the two Governments within six months from the date of that Protocol; and

Whereas this period was extended by subsequent arrangement:

The High Contracting Parties have appointed as their Plenipotentiaries to conclude a Convention for this purpose, that is to say:

Her Britannic Majesty the Queen of the United Kingdom of Great Britain and Ireland, Empress of India, Gerard Augustus Lowther, Her Britannic Majesty's Chargé d'Affaires;

And His Majesty the Emperor of Japan, Marquis Saionji Kimmochi, Junii, first class of the Order of the Sacred Treasure, His Imperial Majesty's Minister of State for Education, and Acting Minister of State for Foreign Affairs;

Who, having communicated to each other their respective full powers, found in good and due form, have agreed upon and concluded the following Articles:—

1. The Tariff annexed to this Convention shall be substituted for the *ad valorem* Tariff annexed to the aforesaid Protocol of the 16th of July, 1894; it shall be subject to all the stipulations contained in Article 1 of that Protocol, in so far as these are applicable, and it shall come into force one month after the exchange of the ratifications of this Convention.

2. The specific duties established by this Convention shall be subject to triennial readjustment. Such readjustment shall be based on the difference between the average of the two quarterly rates of exchange adopted by the Japanese Customs during the six months ending 30th June, 1894, and the average of the rates of exchange adopted by the Japanese Customs for the four quarters preceding that in which each successive period of three years expires.

The Schedule of readjusted duties shall be published by the Japanese Government three months in advance, and shall take effect immediately upon the expiration of the said period.

It is understood between the High Contracting Parties that the operation of this stipulation shall be subject to the acceptance of a similar arrangement by the other Powers with whom Conventional Tariffs are now being negotiated by Japan.

3. The quarterly rates of exchange mentioned in the preceding Article are the rates determining the comparative values, as entered in the quarterly Tables published by the Japanese Department of Finance, of the present Japanese silver yen on the one hand, and of the English pound sterling on the other.

4. The present Convention shall have the same duration as the Treaty and Protocol concluded on the 16th of July, 1894, of which it is a complement.

5. The present Convention shall be ratified, and the ratifications shall be exchanged at Tôkiô as soon as possible, and not later than six months from the present date.

Done at Tôkiô, in duplicate, this 16th day of July, 1895.

(Signed) (L.S.) GERARD AUGUSTUS LOWTHER.  
(L.S.) MARQUIS SAÏONZI.

ANNEX.

TARIFF.

No.	Articles.	Duty.
		Yen.
1	Caoutchouc, manufactures of .....	<i>ad valorem</i> 10 per cent.
2	Cement, Portland .....	100 cattiees 0.065
3	Cotton yarns, plain or dyed .....	" 4.180
	Cotton tissues—	
4	Drills.....	square yard 0.016
5	Duck .....	" 0.053
6	Handkerchiefs in the piece .....	" 0.011
7	Prints.....	" 0.012
8	Sateens, plain, figured, or printed, brocades, Italians and figured shirtings.....	" 0.017
9	Shirtings, dyed.....	" 0.013
10	" gray .....	" 0.006
11	" twilled.....	" 0.011
12	" white or bleached .....	" 0.010
13	T-cloths.....	" 0.009
14	Turkey red cambrics.....	" 0.012
15	Velvets or velveteens .....	" 0.041
16	Victoria lawns .....	" 0.006
17	All other sorts of pure cotton tissues, and all tissues of cotton mixed with flax, hemp, or other fibre, including wool, the cotton, however, predominating in weight, not specially provided for in this Tariff .....	<i>ad valorem</i> 10 per cent.
	NOTE.—It is expressly understood that ready-made clothing and other made-up articles are not included under the heading of Cotton Tissues.	
18	Glass, window, ordinary— (a.) Uncoloured and unstained .....	100 sq. ft. 0.302
	(b.) Coloured, stained, and ground .....	<i>ad valorem</i> 10 per cent.
19	Hats, including also hats of felt .....	10 "
20	Indigo, dry .....	100 cattiees 12.953
	Iron and mild steel—	
21	Pig and ingot .....	" 0.083
22	Bar and rod, exceeding ½-inch in diameter .....	" 0.261
23	Nails, including spikes, sprigs, tacks, and brads— (a.) Plain.....	" 0.573
	(b.) Galvanized .....	<i>ad valorem</i> 10 per cent.
24	Pipes and tubes .....	10 "
25	Plate and sheet .....	100 cattiees 0.296
26	Rails.....	" 0.129
27	Screws, bolts, and nuts, plain and galvanized .....	<i>ad valorem</i> 10 per cent.
28	Sheet, galvanized, both plain and corrugated .....	100 cattiees 0.740
29	Tinned plates:— (a.) Ordinary .....	" 0.691
	(b.) Crystallized .....	<i>ad valorem</i> 10 per cent.

No.	Articles.	Duty.
	Iron and mild steel ( <i>continued</i> )—	Yen.
30	Wire, and small rod not exceeding $\frac{1}{4}$ -inch in diameter .....	100 catties 0.503
31	Wire, telegraph or galvanized .....	" 0.256
	NOTE.—By the term "mild steel" as used in this Tariff is understood mild steel manufactured by the Siemens, Bessemer, Basic, or similar processes, and approximating in value to iron of the same class in this Tariff.	
32	Lead, pig, ingot, and slab .....	" 0.316
33	Leather—	
	(a.) Sole .....	" 5.690
	(b.) Other kinds .....	<i>ad valorem</i> 10 per cent.
34	Linen yarns, plain or dyed .....	100 catties 6.527
	Linen tissues—	
35	Canvas .....	square yard 0.047
36	All other sorts .....	<i>ad valorem</i> 10 per cent.
	NOTE.—It is expressly understood that ready-made clothing and other made-up articles are not included under the heading of Linen Tissues.	
37	Mercury or quicksilver .....	100 catties 5.048
38	Milk, condensed or desiccated .....	doz. 1 lb. tins and proportionately for tins of other weights. 0.123
39	Oil, paraffin .....	<i>ad valorem</i> 10 per cent.
40	Paint in oil .....	100 catties 1.304
41	Paper, printing .....	" 1.163
42	Saltpetre (nitrate of potash) .....	" 0.490
43	Silk-faced cotton satins .....	<i>ad valorem</i> 15 per cent.
	NOTE.—It is expressly understood that all other mixed tissues of cotton and silk, and of wool and silk, where the cotton or wool predominates in weight, are to be classed for duty under Nos. 17 and 61 of this Tariff respectively.	
	Steel (other than mild steel)—	
44	Ingot .....	" 5 "
45	Bar, rod, plate, and sheet .....	" 7 $\frac{1}{2}$ "
46	Wire, and small rod not exceeding $\frac{1}{4}$ -inch in diameter .....	100 catties 1.819
47	Sugar, refined—	
	(a.) No. 15 to No. 20, inclusive, Dutch standard in colour .....	" 0.748
	(b.) Above No. 20 Dutch standard in colour .....	" 0.827
	Tin—	
48	Block, pig, and slab .....	" 1.992
49	Plates .....	<i>ad valorem</i> 10 per cent.
50	Wax, paraffin .....	100 catties 0.544
51	Woollen and worsted yarns, plain or dyed .....	" 9.169
	Woollen and worsted tissues pure or mixed with other material—	
52	Alpacas .....	square yard 0.075
53	Blanketing and whipped blankets in plain weave .....	100 catties 7.458
54	Buntinge .....	square yard 0.031
55	Cloth—	
	(a.) Wholly of woollen or worsted yarn, or of woollen and worsted yarns, such as broad, narrow, and army cloth, cassimeres, tweeds and worsted coatings .....	" 0.093
	(b.) In part of woollen or worsted yarn and in part of cotton yarn, such as pilot, president, and union cloth .....	" 0.039
56	Flannels .....	" 0.044
57	Italian cloth .....	" 0.029
58	Long ells .....	" 0.036
59	Mousseline de laine .....	" 0.021
60	Berges—	
	(a.) Where the warp is worsted and the weft woollen .....	" 0.056 <sup>1</sup>
	(b.) All other kinds .....	<i>ad valorem</i> 10 per cent.
61	All other sorts, pure or mixed with other material, the wool, however, predominating in weight, not specially provided for in this Tariff .....	" 10 "
	NOTE.—It is expressly understood that ready-made clothing and other made-up articles are not included under the heading of Woollen and Worsted Tissues.	
62	Yarns, all sorts, not specially provided for in this Tariff .....	" 10 "
	Zinc—	
63	Block, pig, and slab .....	100 catties 0.451
64	Sheet .....	" 0.928

## WEIGHTS, MEASURES, AND COINS.

The Catty mentioned in this Tariff is the Japanese weight. It is equal to 600 grammes of the metric system of weights, or 1.32277 lb. English avoirdupois weight.

The pound is the English avoirdupois weight.

The square yard and square foot are the English Imperial surface measures.

The yen is the present Japanese silver yen of 900 fineness and 416 grains in weight.

RULE FOR CALCULATING *ad valorem* DUTIES.

Import duties payable *ad valorem* under this Tariff shall be calculated on the actual cost of the articles at the place of purchase, production, or fabrication, with the addition of the cost of insurance and transportation from the place of purchase, production, or fabrication, to the port of discharge, as well as commission, if any exists.

## RULE FOR THE MEASUREMENT OF TISSUES.

In determining the dutiable width of any tissue, the Customs shall discard all fractions of an inch not exceeding half-an-inch, and shall count as a full inch all fractions exceeding half-an-inch.

NOTE.—It is understood that selvages shall not be included in the measurement of tissues.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

EXTRADITION OF FUGITIVE OFFENDERS.  
(DESPATCH RESPECTING.)

*Printed under No. 23 Report from Printing Committee, 22 October, 1896.*

Department of Justice,  
Sydney, 13th October, 1896.

His Excellency the Governor directs the publication, for general information, of the following Despatch, dated 23rd July, 1896, from the Principal Secretary of State for the Colonies.

ALBERT J. GOULD.

(Circular.)

Sir,  
Downing-street,  
23rd July, 1896.

Cases have recently arisen in which applications for the arrest of fugitive offenders have been made by Colonial Police Officers direct to the Police of Foreign Countries and to Her Majesty's Consuls.

It would appear from these communications that the proper course of procedure to be followed in Extradition cases is not generally known in the Colonies; and I would therefore invite the attention of your Government to the Circular issued by the Director of Criminal Investigations to the Chief Officers of Police of the United Kingdom on 1st January, 1880, which was enclosed in Lord Kimberley's Circular Despatch of the 18th June, 1880, and also to the Home Office Memorandum as to Procedure in Extradition cases, which was transmitted to you in Lord Knutsford's Circular Despatch of the 30th April, 1890. In these papers you will find that it was clearly laid down that the application to a Foreign Country for the arrest of a Fugitive Offender must be made through the Foreign Office and the proper diplomatic channels; and that the limits are defined within which direct communications from Police Officers to Foreign Police Authorities are permissible.

I need scarcely impress upon your Government the necessity for demands for Extradition being sent through the regular channel, and I request that instructions may be given that in future direct communications from Colonial Police Officers to

Foreign Police Authorities, which can generally be made most conveniently through Her Majesty's Diplomatic and Consular Officers, should be confined to such as are of the nature indicated in paragraph 15 of the Police Circular of 1880, and in paragraph 2 of Article III of the Home Office Memorandum above referred to.

These paragraphs are as follows:—

*Police Circular of 1880, paragraph 15.*

"It will be desirable in most cases for the Chief Officer of Police demanding the extradition to despatch a letter or telegram to the competent authority, briefly noting the particulars of the request, and adding that the official demand for extradition is about to be made, and requesting such provisional measures as may be possible or expedient."

*Home Office Memorandum of 1890. Article III, paragraph 2.*

"The Chief Officers of English police forces may communicate direct with the police of foreign countries for the purpose of giving or obtaining information, but under no circumstances should direct application be made to foreign police for the arrest of a fugitive. Serious difficulties have arisen in cases where this direction has been overlooked."

I have, &c.,

J. CHAMBERLAIN.

The Officer Administering the  
Government of New South Wales.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

**ORANGES PER S.S. "OPHIR."**

(CORRESPONDENCE FROM THE AGENT-GENERAL RESPECTING SHIPMENT OF.)

*Printed under No. 27 Report from Printing Committee, 13 November, 1896.*

LAI D upon the Table of the Honorable the Legislative Assembly of New South Wales by the Secretary for Mines and Agriculture, copy of correspondence from the Agent-General respecting shipment of oranges per s.s. "Ophir."

The Agent-General for N.S.W. to The Minister for Mines and Agriculture.

Sir,

London, 2 October, 1896.

I have the honor to inform you, in reference to your letter of 17th August last, No. 7, 719A, advising me of the transmission to London, per s.s. "Ophir," of 1,740 cases oranges, that the consignment duly arrived, and the oranges were sold at Monument Yard, London Bridge, on Wednesday last, the 30th ultimo.

I obtained the insertion in newspapers of notices regarding this experimental shipment, which I placed for sale in the hands of Messrs. Keeling and Hunt, leading fruit brokers in London, having previously had a knowledge of these gentlemen, as in 1886 they kindly furnished me with a full report of the orange trade for the information of your Government, and gave me three cases of Valencia oranges to send to the Colony as a guide to the mode of packing the fruit.

The sale was considered a great success, and, as I informed you in my telegram of the 30th ultimo, realised an average price of about 14s. (fourteen shillings) per case.

The fruit arrived in excellent condition, and the No. 1 grade was much approved, and considered equal to any oranges coming to this market. The letter I enclose from Messrs. Keeling and Hunt will give you full particulars as to the condition of the fruit on its arrival, and their opinion with regard to the packing, &c., and I beg to direct your special attention to their practical suggestions in this regard for future guidance.

I am pleased to say that a considerable amount of interest has been evinced in regard to this shipment, arriving, as it did, at a time when the English market is very barely supplied with such fruit from any other country. The sale, on the whole, has been particularly satisfactory.

I have little doubt that a good market can be secured at this period of the year if the fruit offered is of good quality. One fault of this shipment was its unevenness. Care should be taken if possible in large shipments to have the fruit of the very best quality; the mixture of inferior sorts tends to lessen competition and injures the market.

I enclose for your information some of the newspaper comments which have appeared, together with fifty copies of the auction sale, giving the prices realised for each kind of orange. (These have not yet come to hand.—J.S.)

I have just received from Messrs. Keeling and Hunt the account sales, which I enclose herein, showing net proceeds of £1,111 15s. 2d., for which I have their cheque, which I will pay to the credit of the Public Account of the Government at the London and Westminster Bank.

I have, &c.,

SAUL SAMUEL.

Messrs. Keeling and Hunt to The Agent-General, N.S.W.

Dear Sir,

London, 1 October, 1896.

We beg to inform you that we landed the oranges *ex* "Ophir" in very good condition with very few exceptions.

The fruit carried in the refrigerators was fresh and full, some rather cold, with here and there a little waste.

Fifteen boxes were brought over in the hold. The five boxes marked "S. M. Co.'y" were fairly fresh; five marked "Parker" were rather stale, spotted and flabby; and five marked "Pumice" were very stale, flabby, and bad. We condemn this style of packing.

Quality—Good, especially the No. 1, which were excellent. The Nos. 2 and 3 of each mark showed very little difference. The prices realised give the best idea of our buyers' appreciation of the fruit.

Packing—Good generally. We always recommend the use of tissue paper only, avoiding soft shavings, sand, pumice dust, or other packing.

Those that were well and firmly packed in the white paper only, looked very nice when opened—any addition spoils their appearance.

Boxes are very good, allowing a free circulation of air.

Freight is very high, viz., 4s. 1d. per box, as compared with an average of 1s. 3d., sometimes 1s. 6d. per case for Valencia oranges. These latter cases are nearly three times the size of the Australians, and weigh from 1 cwt. 1 qr. to 1 cwt. 2 qr. gross.

The voyage from Valencia occupies from nine to ten days, and the oranges are loaded in ordinary steamers as general cargo.

Time—In our opinion the best time for Australian oranges to come upon this market is from the beginning of August to the middle of October, when supplies from other sources are scarce.

Denia and Valencia oranges form our chief supply, commencing usually end of October, and lasting generally till end of June, sometimes going into July. Last season from this district London received 888,725 cases.

The result of the sale of the 1,740 boxes *ex* "Ophir" is generally looked upon as very satisfactory.

We remain, &c.,

KEELING AND HUNT.

(F. KNOTT.)

STATEMENT, Cost, Charges, and Returns.

	£	s.	d.	s.	d.
To 2,076 cases ... ..	487	10	6	4	8·3
Freight on 1,740 cases ... ..	343	13	4	3	10·8
Cases ... ..	£64	15	2		
Wrappers ... ..	20	3	0		
Rail carriage ... ..	9	0	8		
Wharfage ... ..	3	12	6		
Insurance ... ..	2	5	3		
Sundry charges ... ..	4	5	6		
				104	2 1
Cartage, wrapping, packing, and expenses ...		64	10 0	0	8·9
				£999	15 11
By account sales, London ... ..	£1,195	15	6		
Commission and charges ... ..	84	0	4		
				1,111	15 2 12 9
To net cost as above ... ..	999	15	11		
Less returns from sale of culls, &c. ... ..	31	11	4		
				968	4 7 11 1·5
Net profit ... ..	£143	10	7	1	7·8

Equal to 14·7 per cent.

J. STEPHENSON,  
Secretary.

1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

AGE OF CONSENT.

(PETITION FROM CERTAIN RESIDENTS OF DUBBO, IN FAVOUR OF AN AMENDMENT IN THE LAW  
THAT THE "AGE OF CONSENT" IN THIS COLONY MAY BE RAISED TO 18 YEARS.

*Received by the Legislative Assembly, 14 July, 1896.*

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned,—

**RESPECTFULLY SHOWETH:—**

That, in the opinion of your Petitioners, the law in this Colony for the protection of young girls is totally inadequate for this purpose, and that consequently there is a deplorable amount of defilement of young females.

Your Petitioners believe that the sanction practically given by the law to the seduction of any girl above the age of 14 years is attended with most disastrous social and moral results. No community can truly prosper in which large numbers of its young girls, the wives and mothers of the future, are debauched at the beginning of their lives.

Your Petitioners are convinced that few, if any, girls between the age of 14 and 18 can realise the consequences to themselves of consenting to their own seduction. They are often unaware of the physical results which may ensue, and still less can they estimate the social obloquy and life-long disgrace which will follow the discovery of their fall, nor do they realise that the first downward step leads them almost inevitably to the terrible calling of the prostitute.

Your Petitioners would point out that the age of protection has been raised during 1895 in eight States of the United States of America to 18 years.

Your Petitioners therefore humbly pray that your Honorable House may take into consideration the expediency of so amending the law that the "age of consent" in this Colony may be raised to at least 18 years.

Similar Petitions were received,—

On 16th July, from certain Residents of Dubbo; 66 signatures.

On 16th July, from certain Residents of Tamworth; 75 signatures.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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AGE OF CONSENT.

(PETITION FROM CERTAIN RESIDENTS OF MUDGEE IN FAVOUR OF AN AMENDMENT IN THE LAW THAT THE AGE OF CONSENT IN THIS COLONY MAY BE RAISED TO 18 YEARS.)

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*Received by the Legislative Assembly, 30 July, 1896.*

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To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the undersigned,—

RESPECTFULLY SHOWETH:—

That in the opinion of your Petitioners the laws in this Colony for the protection of young girls are totally inadequate for this purpose, and that consequently there is a deplorable amount of defilement of young females. Your Petitioners believe that the sanction practically given by the law to the seduction of any girl above the age of 14 years is attended with most disastrous social and moral results. No community can truly prosper in which large numbers of its young girls, the wives and mothers of the future, are debauched at the beginning of their lives. Your Petitioners are convinced that few, if any, girls between the ages of 14 and 18 can realise the consequences to themselves of consenting to their own seduction. They are often unaware of the physical results which may ensue, and still less can they estimate the social obloquy and lifelong disgrace which will follow the discovery of their fall, nor do they realise that the first downward step leads them almost inevitably to the terrible calling of the prostitute. Your Potitioners would point out that the age of protection has been raised during 1895 in eight States of America to 18 years.

Your Petitioners therefore pray that your Honorable House may take into consideration the expediency of so amending the law that the "age of consent" in this Colony may be raised to at least 18 years.

And your Petitioners will ever pray.

[*Here follow 215 signatures.*]

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1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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AGE OF CONSENT.

(PETITION FROM CERTAIN RESIDENTS OF BOTANY, IN FAVOUR OF AN AMENDMENT IN THE LAW,  
THAT THE "AGE OF CONSENT" IN THIS COLONY MAY BE RAISED TO 18 YEARS.)

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*Received by the Legislative Assembly, 13 August, 1896.*

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To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the undersigned,—

RESPECTFULLY SHOWETH:—

That, in the opinion of your Petitioners, the laws in this Colony for the protection of young girls are totally inadequate for this purpose, and that consequently there is a deplorable amount of defilement of young females. Your Petitioners believe that the sanction practically given by the law to the seduction of any girl above the age of 14 years is attended with most disastrous social and moral results. No community can truly prosper in which large numbers of its young girls, the wives and mothers of the future, are debauched at the beginning of their lives. Your Petitioners are convinced that few, if any, girls between the ages of 14 and 18 can realise the consequences to themselves of consenting to their own seduction. They are often unaware of the physical results which may ensue, and still less can they estimate the social obloquy and lifelong disgrace which will follow the discovery of their fall, nor do they realise that the first downward step leads them almost inevitably to the terrible calling of the prostitute. Your Petitioners would point out that the age of protection has been raised during 1895 in eight States of the United States of America to 18 years.

Your Petitioners, therefore, pray that your Honorable House may take into consideration the expediency of so amending the law that the "age of consent" in this Colony may be raised to at least 18 years.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 25 signatures.]

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1896.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

## AGE OF CONSENT.

(PETITION FROM CERTAIN INHABITANTS OF NOWRA, IN FAVOUR OF AN AMENDMENT IN THE LAW THAT THE "AGE OF CONSENT" IN THIS COLONY MAY BE RAISED TO 18 YEARS.)

*Received by the Legislative Assembly, 18 August, 1896.*

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the undersigned,—

RESPECTFULLY SHOWETH:—

That, in the opinion of your Petitioners, the law in this Colony for the protection of young girls is totally inadequate for this purpose, and that consequently there is a deplorable amount of defilement of young females.

Your Petitioners believe that the sanction practically given by the law to the seduction of any girl above the age of 14 years is attended with most disastrous social and moral results. No community can truly prosper in which large numbers of its young girls, the wives and mothers of the future, are debauched at the beginning of their lives.

Your Petitioners are convinced that few, if any, girls between the ages of 14 and 18 can realise the consequences to themselves of consenting to their own seduction. They are often unaware of the physical results which may ensue, and still less can they estimate the social obloquy and lifelong disgrace which will follow the discovery of their fall, nor do they realise that the first downward step leads them almost inevitably to the terrible calling of the prostitute.

Your Petitioners would point out that the age of protection has been raised during 1895 in eight States of the United States of America to 18 years.

Your Petitioners therefore humbly pray that your Honorable House may take into consideration the expediency of so amending the law that the "age of consent" in this Colony may be raised to at least 18 years.

*[Here follow 39 signatures.]*

Similar Petitions were received,—

- On 18 August, from certain Inhabitants of Bingara; 66 signatures.
- "    "    from certain Inhabitants of Newtown; 154 signatures.
- On 20 August, from certain Inhabitants of Bathurst; 154 signatures.
- "    "    from certain Inhabitants of Casino and District; 85 signatures.
- "    "    from certain Inhabitants of Helensburgh and Lilly Vale; 135 signatures.
- "    "    from certain Inhabitants of Forest Lodge and other Suburbs; 139 signatures.
- "    "    from certain Inhabitants of Queanbeyan; 34 signatures.
- "    "    from certain Inhabitants of Botany; 12 signatures.
- "    "    from certain Inhabitants of Lithgow and District; 102 signatures.
- "    "    from certain Inhabitants of Minmi; 317 signatures.
- "    "    from certain Inhabitants of East and West Maitland; 148 signatures.
- "    "    from certain Inhabitants of Rockdale; 10 signatures.
- "    "    from certain Inhabitants of the Manning River District; 58 signatures.
- "    "    from certain Inhabitants of Barraba; 102 signatures.
- "    "    from certain Inhabitants of Cobargo, Bermagui, Tilba, Murrumbidgee, and Wapengo; 33 signatures.

On 20 August, from certain Residents of New South Wales; 70 signatures.  
 " " from certain Residents of the Clarence River District; 88 signatures.  
 " " from certain Inhabitants of New South Wales; 57 signatures.  
 " " from certain Residents of Narrandera; 50 signatures.  
 " " from certain Residents of Young; 116 signatures.  
 " " from certain Inhabitants of Temora; 27 signatures.  
 " " from certain Inhabitants of Hargraves and District; 92 signatures.  
 " " from certain Residents of Armidale and District; 83 signatures.  
 " " from certain Inhabitants of Uralla; 64 signatures.  
 " " from certain Inhabitants of Walcha; 49 signatures.  
 " " from certain Inhabitants of Balmain; 57 signatures.  
 " " from certain Inhabitants of Albury; 66 signatures.  
 " " from certain Inhabitants of Hay; 59 signatures.  
 " " from certain Inhabitants of Bombala; 35 signatures.  
 " " from certain Inhabitants of Sydney and Suburbs; 24 signatures.  
 " " from certain Inhabitants of Sofala and Wattle Flat; 35 signatures.  
 " " from certain Inhabitants of New South Wales; 146 signatures.  
 " " from certain Inhabitants of Petersham; 66 signatures.  
 " " from certain Inhabitants of New South Wales; 163 signatures.  
 " " from certain Inhabitants of Peak Hill; 58 signatures.

1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

AGE OF CONSENT.

(PETITION FROM CERTAIN INHABITANTS OF WALLSEND AND PLATTSBURG, IN FAVOUR OF AN AMENDMENT IN THE LAW THAT THE "AGE OF CONSENT" IN THIS COLONY MAY BE RAISED TO 18 YEARS.)

*Received by the Legislative Assembly, 25 August, 1896.*

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned,—

RESPECTFULLY SHOWETH:—

That, in the opinion of your Petitioners, the law in this Colony for the protection of young girls is totally inadequate for this purpose, and that consequently there is a deplorable amount of defilement of young females.

Your Petitioners believe that the sanction practically given by the law to the seduction of any girl above the age of 14 years is attended with most disastrous social and moral results. No community can truly prosper in which large numbers of its young girls, the wives and mothers of the future, are debauched at the beginning of their lives.

Your Petitioners are convinced that few, if any, girls between the ages of 14 and 18 can realise the consequences to themselves of consenting to their own seduction. They are often unaware of the physical results which may ensue, and still less can they estimate the social obloquy and lifelong disgrace which will follow the discovery of their fall, nor do they realise that the first downward step leads them almost inevitably to the terrible calling of the prostitute.

Your Petitioners would point out that the age of protection has been raised during 1895 in eight States of the United States of America to 18 years.

Your Petitioners therefore humbly pray that your Honorable House may take into consideration the expediency of so amending the law that the "age of consent" in this Colony may be raised to at least 18 years.

*[Here follow 46 signatures.]*

Similar Petitions were received,—

On 25 August, from certain Inhabitants of Coonamble; 34 signatures.  
 " " from certain Inhabitants of Tenterfield; 89 signatures.  
 " " from certain Inhabitants of Summer Hill; 55 signatures.  
 " " from certain Inhabitants of Crookwell and District; 47 signatures.  
 " " from certain Inhabitants of North Willoughby; 38 signatures.  
 " " from certain Inhabitants of Marrickville; 34 signatures.  
 " " from certain Inhabitants of New South Wales; 87 signatures.  
 " " from certain Inhabitants of Yass and District; 89 signatures.  
 " " from certain Inhabitants of Liverpool and District; 40 signatures.  
 " " from certain Inhabitants of Quirindi; 18 signatures.  
 " " from certain Inhabitants of Cowra; 32 signatures.  
 " " from certain Inhabitants of Hill End and Tambaroora; 53 signatures.  
 " " from certain Inhabitants of Rookwood and Auburn; 65 signatures.  
 " " from certain Inhabitants of Granville and Harris Park; 36 signatures.  
 " " from certain Inhabitants of Wallsend and District; 270 signatures.

On

- On 25 August, from certain Inhabitants of Lambton; 490 signatures.  
 " " from certain Inhabitants of St. Peters; 112 signatures.  
 " " from certain Inhabitants of Picton; 95 signatures.  
 " " from certain Inhabitants of Stockton; 161 signatures.  
 " " from certain Inhabitants of Singleton and District; 87 signatures.  
 On 26 August, from certain Inhabitants of Tighe's Hill, North Waratah, and Islington; 195 signatures.  
 " " from certain Inhabitants of Ryde and Carlingford; 202 signatures.  
 " " from certain Inhabitants of Tumut; 35 signatures.  
 " " from certain Inhabitants of Wollongong and District; 73 signatures.  
 " " from certain Inhabitants of West Maitland; 67 signatures.  
 " " from certain Inhabitants of Newcastle; 110 signatures.  
 " " from certain Inhabitants of Sydney and Suburbs; 262 signatures.  
 " " from certain Inhabitants of New South Wales; 22 signatures.  
 " " from certain Inhabitants of Kiama and District; 32 signatures.  
 On 27 August, from certain Inhabitants of Bowral Electorate; 133 signatures.  
 " " from certain Inhabitants of Moss Vale; 28 signatures.





1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

---

AGE OF CONSENT.

(PETITION FROM CERTAIN INHABITANTS OF KEMPSEY, IN FAVOUR OF AN AMENDMENT IN THE LAW THAT THE "AGE OF CONSENT" IN THIS COLONY MAY BE RAISED TO 18 YEARS.)

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*Received by the Legislative Assembly, 8 September, 1896.*

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To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the undersigned Inhabitants of Kempsey,—

RESPECTFULLY SHOWETH:—

That, in the opinion of your Petitioners, the law in this Colony for the protection of young girls is totally inadequate for this purpose, and that consequently there is a deplorable amount of defilement of young females.

Your Petitioners believe that the sanction practically given by the law to the seduction of any girl above the age of 14 years is attended with most disastrous social and moral results. No community can truly prosper in which large numbers of its young girls, the wives and mothers of the future, are debauched at the beginning of their lives.

Your Petitioners are convinced that few, if any, girls between the ages of 14 and 18 can realise the consequences to themselves of consenting to their own seduction. They are often unaware of the physical results which may ensue, and still less can they estimate the social obloquy and lifelong disgrace which will follow the discovery of their fall, nor do they realise that the first downward step leads them almost inevitably to the terrible calling of the prostitute.

Your Petitioners would point out that the age of protection has been raised during 1895 in eight States of the United States of America to 18 years.

Your Petitioners therefore humbly pray that your Honorable House may take into consideration the expediency of so amending the law that the "age of consent" in this Colony may be raised to at least 18 years.

[*Here follow 82 signatures.*]

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A similar Petition was received,—

On 8th September, 1896, from certain Inhabitants of Lismore; 65 signatures.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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## AGE OF CONSENT.

(PETITION FROM CERTAIN INHABITANTS OF PARKES, IN FAVOUR OF AN AMENDMENT IN THE LAW THAT THE "AGE OF CONSENT" IN THIS COLONY MAY BE RAISED TO 18 YEARS.)

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*Received by the Legislative Assembly, 15 September, 1896.*

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To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the undersigned,—

RESPECTFULLY SHOWETH:—

That, in the opinion of your Petitioners, the law in this Colony for the protection of young girls is totally inadequate for this purpose, and that consequently there is a deplorable amount of defilement of young females.

Your Petitioners believe that the sanction practically given by the law to the seduction of any girl above the age of 14 years is attended with most disastrous social and moral results. No community can truly prosper in which large numbers of its young girls, the wives and mothers of the future, are debauched at the beginning of their lives.

Your Petitioners are convinced that few, if any, girls between the ages of 14 and 18 can realise the consequences to themselves of consenting to their own seduction. They are often unaware of the physical results which may ensue, and still less can they estimate the social obloquy and lifelong disgrace which will follow the discovery of their fall, nor do they realise that the first downward step leads them almost inevitably to the terrible calling of the prostitute.

Your Petitioners would point out that the age of protection has been raised during 1895 in eight States of the United States of America to 18 years.

Your Petitioners therefore humbly pray that your Honorable House may take into consideration the expediency of so amending the law that the "age of consent" in this Colony may be raised to at least 18 years.

[Here follow 124 signatures.]

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## INSTRUCTIONS FOR USE.

1. Clean the type thoroughly before starting to cut the Stencil.
2. Throw the Typewriter Ribbon out of operation, or if the Typewriter is without a Ribbon Switch, remove the Ribbon.
3. Remove the greaseproof paper from between the Stencil and the backing sheet.
4. Insert Carbon Paper between the Stencil and the backing sheet, **TAKING CARE** that the carbon is facing the Stencil. This will ensure perfect visibility while typing.
5. Take the combination of backing sheet and stencil paper and place it in the typewriter. When typing Stencil, use a firm even touch.
6. When turning back the Stencil for insertion or correction, avoid wrinkling by holding the bottom of the Stencil and backing sheet together, pull gently, then turn the platen of the typewriter.
7. To ensure perfect work, the typewriter should be in first-class condition.

1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

**PHARMACY BILL.**

(PETITION FROM CERTAIN RESIDENTS OF NEW SOUTH WALES IN FAVOUR OF.)

*Received by the Legislative Assembly, 14 July, 1896.*

To the Honorable the Speaker and the Honorable Members of the Legislative Assembly.

The undersigned Residents of New South Wales beg to submit the following Petition, viz.,—

That you will support the Pharmacy Bill which the Government intend bringing before the Honorable House; the Poisons Act now in force is altogether insufficient and faulty. In all civilized countries it is recognised that a special training is required to allow a person to establish a business as chemist and druggist. This Colony is about the only British Possession which has no Pharmacy Bill, and where, under the present Poisons Act, anyone without the slightest knowledge can carry on a business as chemist and druggist. The frightful consequences of this fact stand glaringly before anyone.

The Pharmacy Bill should exactly state what training and which qualifications are required to allow persons to call themselves chemists, and to act as such, and nobody else should be allowed to do so.

The Board of Pharmacy, elected in the first instance by Government, should have the duty and the power to supervise the education of young pharmacists, to examine them, to inquire into the qualifications of applicants, and to grant or refuse licenses. The present Poisons Act does not allow the Board to register chemists unless they have passed the examinations of this Board, or are pharmaceutical chemists of Great Britain; therefore, fully qualified chemists from other British colonies or other countries are unable to obtain registration here. The proposed Bill should give the Board power to recognise other fully qualified men.

Power should be given to the Board to administer the Pharmacy Bill, and to prosecute offenders, which at present can only be done through the medium of the police.

The Bill should regulate the duties of the Board and their servants. The Board should be authorised to receive certain fees and to use the money for the payment of their servants, &c., who should be appointed by the Board. The Board should have power to make regulations in a certain limited direction, and should also have to make reports to the Colonial Treasurer at certain periods, which reports should be laid before both Houses of Parliament.

The Bill should declare which articles are to be considered poisons within the meaning of the Bill, prescribe the mode of dealing with poison, and the manner in which records of sales of poisons must be kept, and specify the penalties for contravention of the Bill.

And your Petitioners pray your Honorable House to take the premises into favourable consideration and pass a Pharmacy Bill on the lines indicated into law during the present Session.

And your Petitioners, as in duty bound, will ever pray.

[Here follows 3,381 signatures.]



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

**ATROCITIES IN ARMENIA.**

(PETITION FROM T. S. FORSAITH, HONORARY SECRETARY OF THE N. S. W. BRANCH OF THE EVANGELICAL ALLIANCE, PRAYING THE HOUSE TO PASS A RESOLUTION RESPECTING.)

*Received by the Legislative Assembly, 29 July, 1896.*

To the Honorable the Speaker and Members of the Legislative Assembly.

The respectful Petition of the President, Vice-Presidents, Members of Council, and Private Members of the New South Wales Branch of the Evangelical Alliance,—

SHOWETH:—

That your Petitioners, in common with the great majority of all classes of the community of this Colony, deeply deplore the inhuman proceedings that for some time past have prevailed in Armenia. Irrespective of all political questions, your Petitioners consider the atrocities inflicted on Christians in Armenia a disgrace to civilisation and an outrage upon the common instincts of humanity. It is not necessary to enter minutely into details, but merely to indicate the sufficiency of the basis on which the feeling of your Petitioners and the bulk of the people of this Colony rests. It may be stated that the Duke of Westminster is in possession of the following facts, obtained from undoubted authority, of outrages perpetrated in the one District of Karpook.

Christians killed by weapons,—29,544.  
 „ burned to death,—1,383.  
 „ died from fear,—793.  
 „ died from hunger, cold, and disease,—5,561.  
 „ wounded,—8,000.  
 „ houses burned,—28,562.  
 „ forcible conversions to Islam,—15,179.  
 Churches, religious houses, and schools destroyed,—227.  
 Destitute persons existing on charity,—92,960.  
 Women forcibly wedded to Turks,—1,532.

Your Petitioners are fully aware that, practically, the Parliament of New South Wales cannot remedy those outrages; but regarding our Parliament as representative of our national sentiments, we do most earnestly and respectfully pray that your Honorable House will follow the patriotic example of the Parliament of the Dominion of Canada, and pass a resolution in such form as your wisdom may suggest expressive of the deep feeling of horror with which the people of New South Wales regard the above-mentioned atrocities, to be forwarded to Her Most Gracious Majesty's Ministers of State, as indicating the strong desire of the people of this Colony that the Imperial Government may take effectual means to put an end to proceedings in Asia Minor that not only shock our human nature but disgrace our national character.

And your Petitioners, as in duty bound, will ever pray.

On behalf and by instruction, representing the Office-bearers and Members of the Evangelical Alliance—the Petitioners.

THOMAS SPENCER FORSAITH,  
Honorary Secretary.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

**MR. LUKE HAYES.**

(PETITION FROM, PRAYING FOR CONSIDERATION OF HIS CASE.)

*Received by the Legislative Assembly, 12 August, 1896.*

To the Legislative Assembly of New South Wales in Parliament assembled.

The humble Petition of Luke Hayes,—

SHOWETH:—

That on or about the 20th day of June, A.D., 1887, your Petitioner was at that time travelling by rail from Sydney to Peate's Ferry. The train in which he was, met with an accident through the brakes failing, and was wrecked at the foot of the incline going into the Peate's Ferry Station. Your Petitioner was stunned at the time and considerably shaken, but, not thinking that he would feel any bad effects in future years, failed to apply for compensation.

At the time of the accident your Petitioner was employed as Messenger at the Sydney Hospital, in which capacity he served for seventeen years, and left that institution in January, 1891.

For some time previous to that date your Petitioner's left shoulder and side showed symptoms of something being wrong. Your Petitioner then consulted Dr. Rennie, Government Pathologist, who thoroughly examined him, and advised that the muscles of the left shoulder had been moved from their natural position by the shock at the time of the accident. Dr. Rennie prescribed for your Petitioner, at the same time telling him to keep the arm quiet, but without any beneficial result. The arm of your Petitioner has been gradually wasting away, and is now of little use to him.

Your Petitioner, in January, 1896, through John Haynes, Esq., M.P., applied to the Honorable the Premier and Colonial Treasurer for some light employment as a means of livelihood. The application was referred to the Railway Commissioners. A gentleman from the Railway Department called on your Petitioner, and interviewed him. Two days after, your Petitioner received a notification from the Railway Department that they had no work that he could do at his age, 62 years last birthday.

Your Petitioner then petitioned the Railway Commissioners for such compensation as they should deem adequate for his injuries. The Railway Commissioners reply was that the petition could not be entertained.

Your Petitioner now prays your Honorable Assembly to give his case your favourable consideration, as at the present time he is unable to perform any manual labour through the accident he incurred on the date before mentioned, and through no fault of his own.

And your Petitioner will ever humbly pray.

LUKE HAYES.

Dated this 12th day of August, 1896.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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**FACTORIES AND SHOPS BILL.**

PETITION FROM CERTAIN TOBACCONISTS OF NEW SOUTH WALES, PRAYING THE HOUSE TO  
EXEMPT THEM FROM.)

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*Received by the Legislative Assembly, 18 August, 1896.*

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WE, the Tobacconists of New South Wales, humbly pray that we be exempt from the Factories and Shops Act now before the Legislative Assembly with regard to early closing, on the grounds that we should be put into unfair competition with hotel-keepers, fruiterers, restaurateurs, &c., the majority of whom now hold tobacco licenses; and seeing that the Act permits them to remain open up to any hour our trade would be diverted into their hands to our detriment, loss, and possible ruin.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 138 signatures.]

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1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

GORE AND ARTARMON ESTATES, NORTH SHORE.

(PETITION FROM JOHN HENRY OSCAR FFRENCH, OF GREENWICH, NEAR SYDNEY, PRAYING TO BE REPRESENTED BY COUNSEL, ATTORNEY, OR IN PERSON, BEFORE SELECT COMMITTEE ON.)

*Received by the Legislative Assembly, 25 August, 1896.*

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of John Henry Oscar Ffrench, of Greenwich, near Sydney, in the Colony of New South Wales, gentleman,—

HUMBLY SHOWETH:—

1. That on the 10th day of August, in the year of our Lord, 1896, or thereabouts, your Honorable House appointed a Select Committee to inquire into and report upon the Gore and Artarmon Estates.

2. That your Petitioner humbly prays that he may be represented by counsel or attorney, or in person, before the Select Committee appointed to inquire into and report upon the said matter, with the right to call witnesses and adduce evidence, and to examine and cross-examine such witnesses as may give evidence before the said Committee.

And your Petitioner, as in duty bound, will ever pray.

Dated at Sydney, this 25th day of August, A.D. 1896.

JOHN H. O. FFRENCH.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

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REPORT FROM THE SELECT COMMITTEE

ON

GORE AND ARTARMON ESTATES, NORTH SHORE;

TOGETHER WITH THE

PROCEEDINGS OF THE COMMITTEE,

MINUTES OF EVIDENCE

AND

APPENDIX.

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*Printed under No. 27 Report from Printing Committee, 13 November, 1896, A.M.*

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SYDNEY: WILLIAM APPELGATE GULLICK, GOVERNMENT PRINTER,

1896:

1896.

EXTRACTS FROM THE VOTES AND PROCEEDINGS OF THE  
LEGISLATIVE ASSEMBLY.

VOTES No. 40. TUESDAY, 11 AUGUST, 1896.

12. GORE AND ARTARMON ESTATES, NORTH SHORE:—Mr. E. M. Clark moved, pursuant to Notice,—
- (1.) That a Select Committee be appointed to inquire into and report upon the claims and titles to the various grants known as the Gore and Artarmon Estates, North Shore.
- (2.) That such Committee consist of Mr. Carruthers, Mr. Howarth, Mr. Haynes, Mr. J. C. L. Fitzpatrick, Mr. Law, Mr. O'Sullivan, Mr. Watson, Mr. Gormly, and the Mover.
- Debate ensued.
- Question put and passed.

VOTES No. 46. TUESDAY, 25 AUGUST, 1896.

6. GORE AND ARTARMON ESTATES, NORTH SHORE:—Mr. Howarth presented a Petition from John Henry Oscar French, of Greenwich, near Sydney, stating that a Select Committee had been appointed by the House to inquire into and report upon the Gore and Artarmon Estates, North Shore; and praying to be represented by counsel or attorney, or in person, before the said Committee, with the right to call witnesses, and to examine and cross-examine all witnesses that may give evidence.
- Petition received.
- Ordered to be referred to the Select Committee.

VOTES No. 81. THURSDAY, 12 NOVEMBER, 1896.

12. GORE AND ARTARMON ESTATES, NORTH SHORE:—Mr. E. M. Clark, as Chairman, brought up the Report from, and laid upon the Table the Minutes of Proceedings of, and Evidence taken before, the Select Committee for whose consideration and report this subject was referred on 11th August, 1896; together with Appendix.
- Referred by Sessional Order to the Printing Committee.

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1896.

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**GORE AND ARTARMON ESTATES, NORTH SHORE.**

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**REPORT.**

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THE SELECT COMMITTEE of the Legislative Assembly, appointed on 11th August, 1896,—“to inquire into and report upon the claims and titles to the various grants known as the Gore and Artarmon Estates, North Shore,”—have agreed to the following Report:—

Your Committee having examined the witnesses named in the List\* \*See List, p. 7. (whose evidence will be found appended hereto), find:—

1. That the whole question of the title to the lands in dispute dates back to the year 1794, when certain grants were issued to old soldiers, which were afterwards acquired for small considerations by William Gore, Lord Provost and Sheriff of the Colony, in or about the year 1810, and have since been the subject of much litigation, owing to the conflicting claims to the estate set up by various persons.

2. That about the year 1815 Gore mortgaged the land, comprising in all over 1,000 acres, to one D'Arcy Wentworth, who afterwards foreclosed, but, in consideration of a Crown grant of 1,500 acres in the Illawarra District, and at the request of the then Governor of the Colony, handed over his right, title, and interest in the Gore Estate to Ann Gore, the wife of William Gore.

3. That while the evidence is conflicting as to the issue of a consolidated grant to Ann Gore in respect to such estate in 1833, as well as to the existence of such grant, it is evident that the Gore family were the recognised owners of the defined portions of this land by possession, and by the action of Governor Macquarie in regard to D'Arcy Wentworth's claim to the estate, and that there was an intention to issue such consolidated grant.

4. That the after difficulties in connection with the estate appear to be due to the acts of William Bligh Gore, a son of Ann Gore, who so recklessly mortgaged and bartered the estate without apparent authority or concurrence of the other members of the Gore family as to set up claims by, and on behalf of, R. A. W. Green, Thos. Broughton, John Boyle, and the Crown.

5. That in regard to Green's claim, which dates as far back as 1842, there was evidently an arrangement between his father and William Bligh Gore by which the estate was divided between them; but in the absence of documentary evidence on the subject, your Committee cannot express an opinion, except that Green has been in possession of the property for many years, and that such well-known persons as the late Crown Solicitor, Mr. John Williams, the late Sir Robert Wisdom, the late Judge Innes, Mr. Acting Justice Rogers, and Mr. Thomas Broughton have purchased some of the land from Green on the title held by him, although Mr. Knapp, a well-known and reliable surveyor, identifies some of this land from a survey made by his father in 1833-6 as Crown lands.

6. That so far as Broughton's claims are concerned they are very conflicting, for although claiming to own 940 acres of the land by reason of some monetary transactions with one Shuttleworth in 1855, he has as yet only completed his title to about 316 acres of the land, and in doing so has all along recognised some rights of the Gore family, Green, and Boyle, besides maintaining his own rights by force and violence.

7. That the claim of Boyle is in regard to 200 acres, known as Artarmon Grant, 150 acres, and two adjoining farms, and is the result of some negotiations entered into with William Bligh Gore, about 1850, since which time he has been in possession, while in 1853 the late Sir Alfred Stephen decided a question of title in his favour. That he was afterwards persuaded by one Freehill to hand him his title-deeds without any consideration, and Freehill afterwards dealt with the land, which was the source of much litigation between Boyle, Broughton, and others, while any title in regard to the land was also upheld by force and violence on the part of those concerned.

7. That in regard to the title of the Crown to 140 acres of the land, which in 1869 they dedicated by deed to the Willoughby Municipal Council, and which dedication has since been revoked, in opposition to the desire of the said Council, who still hold possession of the deed, the evidence is clear that this land formed portion of the grants (Brumby's, Bruin's, Holdsworth's, and others) included in the Gore Estate, so that if the Crown can successfully assert a right to this land they can equally do so in regard to the remainder of the estate, including the 100 acres mentioned by Mr. Knapp, and now claimed by the descendants of the Gore family, Green, Broughton, Boyle, and others; and although some of the land has been placed under the Real Property Act, the evidence reveals such irregularities in regard to the service of notices required by law by the parties interested as to make it possible for the Crown to dispute the titles issued.

Your Committee are therefore of opinion that as the value of the land involved must exceed a quarter of a million of money sterling, some steps should be taken on behalf of the Crown to assert such rights to the balance of the land as in the case of the 140 acres of land now claimed by them, with due consideration to the rights of claimants.

EDWARD M. CLARK,  
Chairman.

*No. 2 Committee Room,  
Legislative Assembly,  
12th November, 1896.*

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PROCEEDINGS OF THE COMMITTEE.

WEDNESDAY, 19 AUGUST, 1896.

MEMBERS PRESENT:—

Mr. E. M. Clark,		Mr. Howarth,
Mr. Law,		Mr. O'Sullivan.

Mr. Clark called to the Chair.

Entry from Votes and Proceedings appointing the Committee *read* by the Clerk.

Ordered,—That Mr. John Boyle, Mr. R. A. W. Green, and the Under Secretary for Lands be summoned to give evidence next meeting.

[Adjourned till Tuesday next at 2.15 o'clock.]

TUESDAY, 25 AUGUST, 1896.

MEMBERS PRESENT:—

None.

In the absence of a Quorum, the Meeting called for this day lapsed.

THURSDAY, 27 AUGUST, 1896.

MEMBERS PRESENT:—

Mr. E. M. Clark,		Mr. Law.
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In the absence of a Quorum, the Meeting called for this day lapsed.

WEDNESDAY, 2 SEPTEMBER, 1896.

MEMBERS PRESENT:—

Mr. E. M. Clark in the Chair.

Mr. J. C. L. Fitzpatrick,		Mr. Law,
Mr. O'Sullivan,		Mr. Watson.

Entry from Votes and Proceedings in reference to the Petition of J. H. O. Ffrench, praying to be heard by counsel or attorney, or in person, before the Committee, *read* by the Clerk.

Sydney M. Quinlan, Esq. (*Solicitor*), appeared on behalf of Mr. J. H. O. Ffrench.

Richard Augustus Willoughby Green called in, sworn, and examined.

Witness withdrew.

Sydney Michael Quinlan sworn, and examined.

John Henry Oscar Ffrench called in, sworn, and examined.

Witness withdrew.

John Boyle called in, sworn, and examined.

Witness withdrew.

[Adjourned till Tuesday next at 11 o'clock.]

TUESDAY, 8 SEPTEMBER, 1896.

MEMBERS PRESENT:—

Mr. E. M. Clark in the Chair.

Mr. J. C. L. Fitzpatrick,		Mr. Law.
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Alfred Parry Long (*Registrar-General*) called in, sworn, and examined.

Witness *handed in* statement of applications respecting the Gore and Artarmon Estates, the portions of same brought under the Real Property Act, the caveats against such applications, and how they were disposed of; the persons to whom the certificates of title were issued, the references to such certificates, and how applications which were not granted were disposed of. [*Appendix A1.*] Plan showing the land forming portions of such estates. [*Appendix A2.*]

Witness withdrew.

Edward Arnold Bronsdon (*Clerk in charge of Alienation Branch, Lands Department*) called in, sworn, and examined.

Witness *handed in* plan showing land claimed by the Crown; the grants claimed by Gore; the area for which certificates of title have been granted, and the areas for which applications for certificates of title have been made but are held in abeyance. [*Appendix B.*]

James Bereyne called in, sworn, and examined.

Witness withdrew.

William

William Reynolds called in, sworn, and examined.  
 Witness withdrew.  
 Frederick Henry Holland called in, sworn, and examined.  
 Witness withdrew.  
 Re-assembling of the Committee to be arranged by the Chairman.  
 [Adjourned.]

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THURSDAY, 17 SEPTEMBER, 1896.

MEMBERS PRESENT:—

Mr. E. M. Clark in the Chair.  
 Mr. Howarth, | Mr. Law,  
 Mr. O'Sullivan.

Sydney M. Quinlan, Esq. (*Solicitor*), appeared on behalf of Mr. J. H. O. French.  
 William Kingston Cook called in, sworn, and examined.  
 Witness withdrew.  
 Frederick George Lewis (*Clerk in the Lands Department*) called in, sworn, and examined.  
 Witness produced plan of a survey of the Gore and Artarmon Estates, made in 1849 by Mr. Edward J. H. Knapp.  
 Copy ordered by the Committee to be appended. [*Appendix C.*]  
 Witness withdrew.  
 Edward James Howes Knapp (*Licensed Surveyor*) called in, sworn, and examined.  
 Witness withdrew.  
 [Adjourned till Wednesday next at *Two o'clock.*]

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WEDNESDAY, 23 SEPTEMBER, 1896.

MEMBERS PRESENT:—

Mr. E. M. Clark in the Chair.  
 Mr. J. C. L. Fitzpatrick, | Mr. Howarth,  
 Mr. Law.

Thomas Broughton called in, sworn, and examined.  
 Witness withdrew.  
 [Adjourned till Thursday, 1 October next, at *Two o'clock.*]

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THURSDAY, 1 OCTOBER, 1896.

MEMBERS PRESENT:—

None.

In the absence of a Quorum, the meeting called for this day lapsed.

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TUESDAY, 13 OCTOBER, 1896.

MEMBERS PRESENT:—

Mr. E. M. Clark in the Chair.  
 Mr. Gormly, | Mr. Howarth.

John Horatio Clayton called in, sworn, and examined.  
 Witness withdrew.  
 Henry Wheeler Gillam (*Deputy Registrar-General*) called in, sworn, and examined.  
 Witness withdrew.  
 James Greer called in, sworn, and examined.  
 Witness withdrew.  
 Re-assembling of the Committee to be arranged by the Chairman.  
 [Adjourned.]

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WEDNESDAY, 21 OCTOBER, 1896.

MEMBERS PRESENT:—

Mr. E. M. Clark in the Chair.  
 Mr. J. C. L. Fitzpatrick, | Mr. Howarth,  
 Mr. Watson.

Robert Henry Gordon (*Mayor of Willoughby*) called in, sworn, and examined.  
 Witness withdrew.  
 John Doyle called in, sworn, and examined.  
 Witness withdrew.  
 Richard Augustus Willoughby Green recalled and further examined.  
 Witness withdrew.  
 John Boyle recalled and further examined.  
 Witness withdrew.  
 Re-assembling of the Committee to be arranged by the Chairman.  
 [Adjourned.]

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WEDNESDAY,

WEDNESDAY, 28 OCTOBER, 1896.

MEMBERS PRESENT:—

Mr. E. M. Clark in the Chair.  
Mr. J. C. L. Fitzpatrick, | Mr. Gormly,  
Mr. O'Sullivan.

Sydney M. Quinlan, Esq. (*Solicitor*), appeared on behalf of Mr. J. H. O. Ffrench.  
Charles Maclay Boyce called in, sworn, and examined.

Witness withdrew.

Mrs. Ellen Wilhelmine Ffrench called in, sworn, and examined.

Witness withdrew.

Richard Augustus Willoughby Green recalled and further examined.

Witness withdrew.

Re-assembling of the Committee to be arranged by the Chairman.

[Adjourned.]

THURSDAY, 12 NOVEMBER, 1896.

MEMBERS PRESENT.—

Mr. E. M. Clark in the Chair.  
Mr. J. C. L. Fitzpatrick, | Mr. Howarth,  
Mr. Law.

The Chairman *handed in* the following, which were ordered to be appended:—Tracing of plan attached to attested copy of deed of partition, Gore and others, 1846. [*Appendix D1.*] Tracing of plan attached to copy of conveyance, George Green to John and William Stewart. [*Appendix D2.*] Copy of a grant to Annie Gore, wife of Wm. Gore. [*Appendix E.*]

Chairman submitted Draft Report.

Same read and *agreed to*.

Chairman to report to the House.

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1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

MINUTES OF EVIDENCE

TAKEN BEFORE

THE SELECT COMMITTEE

ON THE

GORE AND ARTARMON ESTATES, NORTH SHORE.

WEDNESDAY, 2 SEPTEMBER, 1896.

Present:—

MR. E. M. CLARK,		MR. LAW,
MR. J. C. L. FITZPATRICK,		MR. O'SULLIVAN,
	MR. WATSON.	

E. M. CLARK, Esq., IN THE CHAIR.

S. M. Quinlan, Esq., Solicitor, appeared for Mr. J. H. O. French.

Richard Augustus Willoughby Green called in, sworn, and examined:—

1. *Chairman.*] What are you? A shipwright and boatbuilder.
2. You know that this is an inquiry in connection with certain claims in the Gore and Artarmon Estates? Yes.
3. You are a claimant in respect of that estate? I am.
4. What do you claim? I claim in the estate all outside of Mr. Broughton's claim.
5. What is the area? About 550 acres of the estate.
6. What was the original area of the whole estate? I assisted in the survey in 1815, and I think we measured up about 1,250 acres altogether.
7. Was there a grant to Gore in regard to that estate? The grant specified 1,000 acres.
8. Perhaps you would make a statement as to what you base your claim upon? I claim under the title of the Gore family and George Green, my father.
9. How did he become possessed of it? In the year 1842 he obtained the equity of redemption by mortgage from Wentworth Lawson, executor of Darcy Wentworth, and in the same year the late Mr. Gore became bankrupt, and my father purchased the whole of the assets in his estate. Gore was in possession of it from 1807 to 1810. In 1815 he mortgaged the land to Darcy Wentworth. In 1818 Wentworth foreclosed upon him. Mr. Gore got into some trouble, and there was an arrangement made with the Governor at the time to give Mrs. Gore 1,500 acres of land in the Illawarra district so as to enable her to make an exchange for the Wentworth-Gore Estate. That exchange took place. I think you will find it all in the Registry Office. Of course, we are now looking for the thousand acres in lieu of the fifteen hundred acres in the Illawarra district. It was all arranged that a consolidated grant should be issued to Mrs. Gore. That was in Governor Macquarie's time. It went on many years before a grant was issued. At last it was issued in 1833, I believe in favour of Mrs. Gore and her children. That grant Geo. Green, my father, became possessed of, but unfortunately many years ago it was stolen out of his house amongst a lot of other documents in connection with the Gore Estate and other property, and it has never been seen since.

R. A. W.  
Green.  
2 Sept., 1896.

- R. A. W. Green.  
2 Sept., 1896.
10. That grant was for the thousand acres? Yes. In 1846 the Gore family came to an arrangement with George Green to divide this thousand acres, and there is a deed drawn up to that effect and signed by the family.
11. What was the result of that division;—how much did Geo. Green become possessed of? He was possessed then of 400 or 500 acres. That was all carried out in the same year, 1846. Geo. Green conveyed to his wife his right, title, and interest in the Gore Estate, and I purchased Maria Green's interest in the estate for £6,000.
12. Have you disposed of any of that land? I have disposed of 100 acres of it conditionally to Mr. Rodgers, Sir Robert Wisdom, and Mr. Broughton.
13. And you still claim to be the possessor of the balance? Yes.
14. Between 400 and 500 acres? Yes; I sold another small portion between 5 and 6 acres to Mr. Justice Innes and Sir Robert Wisdom.
15. *Mr. Law.*] Was that 100 acres that you sold amongst the lot? Yes; I hold one-fifth interest still with them in the 100 acres. I claim another portion of the land near St. Leonard's railway station about 140 acres. I am now in litigation with the Crown about that.
16. *Chairman.*] Do the Crown claim that 140 acres? Yes.
17. I suppose that if the Crown can claim 140 acres, they have as much right to claim the thousand acres? I have always said so. I can produce the grant of that land in several blocks.
18. *Mr. Law.*] Is it fenced in? It has been fenced in. At the time when it was portion of Mr. Gore's Estate, it was called Gore's paddock. There is a portion of the fence there still to be seen.
19. It is disputed land not used? No; I used it myself thirty years ago for brick-making.
20. *Chairman.*] As a matter of fact, to your knowledge, all this land has been in litigation for a long time? Yes.
21. And the owners have had to assert their right to it? Yes.
22. To employ fighting men and other people to assert their right? Yes; and longer possession than the actual documents.
23. How did these grants originate? In about 1810 old Mr. Gore purchased these small grants, which were about thirty-five in number.
24. To whom were these grants made? Generally to old soldiers. "Old soldier grants" they call them.
25. What was the purchase money generally? £3 or £4 and a couple of gallons of rum. In going for a consolidated grant all these old grants were handed over to the Crown on the understanding that a consolidated grant would issue to Mrs. Gore and her children.
26. *Mr. Fitzpatrick.*] All these documents were handed over when the grant of title was made? Yes.
27. *Chairman.*] Yet, notwithstanding all that, the Crown now claims 140 acres? Yes; nearly 200 acres altogether they are trying to claim from me.
28. *Mr. Law.*] Is it 200 acres out of the 500 acres that you claim? Yes; thirty-two years ago I made bricks on a portion of the 140 acres, and it always formed a portion of the old Gore Homestead. It was properly fenced in, but the fence was burnt down in 1844.
29. What is the approximate value of this 500 acres of land? It ought to be worth £100,000.
30. *Chairman.*] Then since you bought Maria Green's interest, you have always held it and asserted a right to it? I have been living on the estate now for over fifty years. I was born within a few hundred yards of it.
31. Your estate represented a number of small grants? Yes; there was Bromby, the one near St. Leonard's railway station, Holdsworth's, Bruin's, Wilkinson's, Webber's, Tailor's, Farmer's, Tilley's, Lamb's, Robinson's, Curry's, Chisolm's, William Carr's, James Brown's, Soyer's, Dark's, Whitfield's, George Loder's.

Sydney Michael Quinlan sworn and examined:—

- S.M. Quinlan.  
2 Sept., 1896.
32. *Chairman.*] Will you make a statement with regard to this estate? This is a matter over which Campbell got into gaol for forging a grant. He was tried before the Chief Justice and got ten years. After that they prevented the general public from having access to original grants, so they can only see copies. In 1797 William Gore was Lord Provost and Sheriff of the Colony. Between 1807 and 1814 the owner of these lands bought them from old soldiers for a small consideration,—probably a bottle of rum or a small sum of money. In 1815 he mortgaged them to Darcy Wentworth for £606. In 1818 (24th February), an equity suit was brought by Darcy Wentworth against William Gore for foreclosure, and William Gore was utterly foreclosed of these lands. In 1818 Darcy Wentworth, then owning the land under the foreclosure, conveyed it away to a man named Thomas Sterrop Amos. On the 25th September, 1818, Amos mortgaged the estate back to Darcy Wentworth to secure the repayment of £500. My idea of that is that it was a blind, because Amos bought it from and conveyed it back the same day to Darcy Wentworth. On the 16th August, 1819, the wife of the original William Gore was in distressed circumstances. Her husband was an improvident man and a spendthrift, and she applied to the then Governor Macquarie for a grant of money to get back the land, and that Governor promised to grant her 1,500 acres of land at Illawarra, which she was to exchange for Darcy Wentworth's, and he was to convey back to her this estate. On the 28th August, 1819, in order to effect this arrangement, Mrs. Gore purchased the equity of redemption in the estate of Amos, and on the 3rd September Darcy Wentworth surrendered the deeds to the Governor for the purpose of the issue of the consolidated grant. Wentworth received, on the 9th January, 1821, from the Crown, a grant of 1,500 acres of land at Illawarra in lieu of his interest in this estate at North Sydney. Up to that time everything was plain sailing; but on the 15th January, 1833, a consolidation of these original grants is said to have issued. Mr. R. A. W. Green and others claiming through him allege that there was a consolidated grant issued by the Crown, but if so, this grant was issued unknown to the Gore family. There is no doubt about that. The Gore family, of course, maintain that that grant is a forgery. The Cumberland Register containing these grants, I am informed, was stolen, and this is one of the original grants that was stolen. How the grant could issue without the Gore family knowing it I do not know; but they did not know it, as for years afterwards the representatives of the family importuned

importuned the Government to issue it. On the 17th January, 1833, Ann Gore died intestate and left seven children. That was the woman to whom the grant was to have been issued. In 1836 one of her daughters, Ann Stanhope Gore, died. We need not go through the dates of the deaths of all the other children. One of the children became the wife of Napier George Campbell, General Commanding in India; one went to Ireland and married a man named Ffrench, and then on 30th November, 1842—lending colour to the fact that the consolidated grant had not issued—the executors of Darcy Wentworth conveyed the lands to George Green, father of Mr. R. A. W. Green, as trustee for the children of Ann Gore. This would imply that the legal estate was outstanding in Wentworth at that date. The legal estate then became vested in the father of Mr. R. A. W. Green. It is alleged that in 1846 the Gore children divided the estate into five portions, but considering that they were here, there, and everywhere, it is difficult to see how that could be done. On the 22nd June, 1849, Frances Catherine Gore, one of the children, mortgaged one-fifth, undivided interest, to Ambrose Foss. Foss, in September, 1850, conveyed to Geo. Want; that would be the father, I believe, of the present Attorney-General. One attorney, named Shuttleworth, was struck off the rolls of the Supreme Court, and I do not know what has not happened in connection with this estate. The father of Mr. Ffrench, as I will convince the Committee, is the only person who had any interest in the estate. He, I am informed, committed suicide over it. He was paymaster of the Treasury for many years. In 1852, the Sheriff sold the interests of William Bligh Gore to Geo. Want, the same man who bought the prior interest. Then there is an old surveyor named Boyle, and in 1853, the Chief Justice, Sir Alfred Stephen, made an order placing him in possession on behalf of the members of the Gore family.

33. *Chairman.*] Of the whole of this 1,000 acres? Yes. In 1863, William Bligh Gore died intestate. Then there were only left William and Ann Gore, and Napier George Campbell. In 1875, Frances Catherine Gore died, leaving one child, and William and Ann Gore left two grandsons—Napier George Campbell and John Henry Ogilvy Gore Power Ffrench. Now they are all dead, with the exception of this young fellow for whom I act, John Henry Oscar Ffrench. Going away from that I will show how Mr. Green got a further lien on the estate. There is no doubt that Mr. Ffrench is entitled to the land even assuming that the consolidated grant issued; there was no evidence that it was mortgaged to anybody, and if it were it was only by one man, and that man's name is William Bligh Gore. He got very poor in later times, and he lived with Mr. R. A. W. Green's father. Assuming for a moment that this consolidated grant issued yet all the other estates in the ground outstanding are in young Ffrench. William Bligh Gore got old, and became very hard up, and he went to live with Mr. Green's father, and mortgaged his interest in the land to him, and I cannot find after patient search what consideration there was given to Mr. Green's father, the only consideration that could have been given was board and residence to William Bligh Gore. Mr. Green's father was a boatbuilder, and staying as he did with Mr. Green's father, Gore seems to have given him a mortgage over the estate, and that mortgage could only speak for as much as it was worth. If it was a mortgage it could only be for the portion of the estate that he possessed. Then Mr. Green's father made a settlement, settling that interest on Mr. Green's mother, Maria Green. Mr. Green's claims to be entitled to that by purchase. Since then Mr. Green has been adjudicated bankrupt, so that if any estate was outstanding in Mr. Green, it would have gone. Apart from that, Mr. Green has had for years to contend with the daily onslaught of parties coming and worrying him. The Crown ranger has, he informs me, for the last thirty-two years given him a daily notice to clear. Now the Crown has served him with notice. He dug up clay for some years on the estate to make bricks. It appears that Mr. Carruthers went over there one day, and saw Mr. Green, and spoke to him on the ground. Green, not knowing who Mr. Carruthers was, ordered him off the premises. Mr. Carruthers said, "I will see that you go off this to-morrow." Mr. Carruthers caused him to be served with an information of intrusion in equity.

34. *Mr. Watson.*] Has he been ejected then? Yes.

35. *Chairman.*] If the Crown claim this 140 acres, they have as much right to all the rest? If the Crown tested it in a court of law they could not get it at all. The court has decided that the Crown cannot regrant land unless it comes back to the Crown in some way. In the statement of claim served on Green, they commence by stating that in 1869 or 1870 certain lands were dedicated by the Crown for purposes of public recreation. If it had already been granted away, the Crown had no power in 1869 to dedicate it. You might as well say that they could dedicate George-street in 1895.

36. *Mr. Watson.*] The land having been granted, they could not take it back? No; they would have to proceed at law by *sci. fa.* The court say you may regrant the land, but the owners must surrender up their title, and be paid so much for it, or their grants recalled by *sci. fa.*

37. *Chairman.*] If they claim 140 acres, they have just as much right to the thousand acres? Assuming the land to have been already granted, they have no more right to it than I have. If they had a right they would have disclosed their title. There is an interesting case in the books when the Crown tried to put old Boyle off the land. The Supreme Court decided, following a judgment delivered by Sir James Martin, that they could not do anything of the sort. The Crown must rely on their own title, not on the weakness of the defendant's case.

38. *Mr. O'Sullivan.*] Who holds the land now? The parties are all on it.

39. *Mr. Fitzpatrick.*] How long is it since the Cumberland Register was discovered to be missing? Very many years, I think. I must tell you the way the Broughtons came into it. Thomas Broughton is now 84 years of age. I believe he was in business with one Pendry, a tailor, and William Gore mortgaged the estate to Pendry. Pendry in some way became connected with a man named Shuttleworth, a solicitor, and he sold his interest to Shuttleworth. Shuttleworth, for his dealing in connection with the estate, was struck off the rolls. He was made bankrupt, and Broughton bought the interest of Shuttleworth in the bankrupt estate.

40. *Mr. O'Sullivan.*] Was Gore Island included in the land? I could not tell you. I do not think you can say with certainty what was included. The soldiers' grants were given without any metes and bounds. In these days grants are not made without metes and bounds. They have to get surveyors to allocate those old grants. In 1850 Boyle came on to the estate to allocate these grants. I do not think you can say with certainty how the grants are situated.

## MINUTES OF EVIDENCE TAKEN BEFORE THE SELECT COMMITTEE

John Henry Oscar Ffrench called in, sworn, and examined:—

- J. H. O. Ffrench.  
2 Sept., 1896.
41. *Chairman.*] Who was your father? John Henry Ogilvie Gore Power Ffrench.  
42. *Mr. Quinlan.*] You claim to be the only heir and direct representative of the original William Gore? Yes. In the Colony.  
43. How many are there out of the Colony? I do not know.  
44. As far as you know they are all dead? Yes.  
45. And you are the son of John Henry Ogilvie Gore Power Ffrench? Yes.  
46. And he was the son of whom? Of Charlotte Sarah Willoe Ffrench.  
47. And she was a daughter of whom? Of William and Ann Gore.  
48. You are also grand nephew of William Bligh Gore who died unmarried? Yes.  
49. And intestate? Yes.  
50. The other children of the original William Gore were Lady Eliza Margoschis Fitzgerald Gore? Yes. The paper annexed contains the names of the other children.  
51. And Ann Stanhope who died young? Yes.  
52. Elizabeth Selina Gore became Mrs. Campbell? Yes.  
53. Francis Catherine Gore and Mrs. Margaret Newcomen Marjoribanks—she became Mrs. Marjoribanks? Yes.  
54. They are all dead? Yes, Mrs. Marjoribanks died without issue.  
55. Do you know how many years your people have been in possession of this land? Sixty years.  
56. Was one of the members of the family buried on the land? Yes. Ann Stanhope Gore was buried on the land and Ann Gore and William Gore.  
57. *Mr. Quinlan.*] Do you know which ground Gore was buried on? He was buried on Whiting's ground.  
58. *Chairman.*] Is Whiting's ground far from the Artarmon Estate? It is part of the Gore Estate.  
59. Is Gore's Hill cemetery part of the Gore Estate? Yes.

John Boyle called in, sworn, and examined:—

- J. Boyle.  
2 Sept., 1896.
60. *Chairman.*] You are a surveyor? Yes.  
61. Do you lay claim to a portion of the Gore and Artarmon Estate? I do.  
62. How did you become possessed of it? Through Mr. Bligh Gore. I became acquainted with him in 1850. He wanted a survey of the estate. The family were very uneasy. There was a claim on the estate through Mr. Pendry. The family did not acknowledge Pendry's mortgage. Old Mr. Gore mortgaged part of the estate to Pendry. I believe this mortgage was a bogus one.  
63. The family repudiated the mortgage? Yes. An effort was made to sue on Pendry's mortgage, and an attorney named Shuttleworth was employed by Mr. Gore. Pendry got round Shuttleworth somehow; they offered to sell the estate to Shuttleworth, and threw us over. They wanted me to make a survey of the whole estate to see how it stood.  
64. Eventually you entered into an arrangement with them? I did.  
65. By which you became possessed of this land? Yes, and whatever I could spare to assist the action I did it.  
66. You have held possession of the land since 1850? Yes.  
67. You have resided on it ever since? Yes, stuck to it.  
68. What estate are you residing on now? On the Artarmon Grant, 150 acres.  
69. That has lately been put under the Real Property Act? Yes.  
70. Were any notices served on you with regard to this? Not officially. Some notices came to bamboozle me. I bought up Shuttleworth's interest.  
71. There have been several efforts made to dispossess you? Yes; they have tried.  
72. Who tried? The Bank of New South Wales tried.  
73. Did Green try? No.  
74. Did Broughton try? No; he would not come against me.  
75. Did Broughton and the Bank of New South Wales try to dispossess you of this land? Yes.  
76. And you still hold possession? I still hold possession.  
77. In 1853 you had a suit in regard to this land, had you not? Yes.  
78. And Sir Alfred Stephen decided in your favour? He did.  
79. Some years ago you entered into an agreement with Messrs. Chappel and Campbell, did you not? I did.  
80. The terms of your arrangement were that you were to sell your interest to them for a certain amount of money? Yes.  
81. How much was the amount? Not to exceed £30,000.  
82. In addition to that you were to receive a weekly payment? Yes; £2 a week until the title was obtained.  
83. Chappel and Campbell made an attempt to obtain a title, and tried to put the property under the Real Property Act? They did.  
84. Whilst they were trying you were satisfied with your bargain? Yes.  
85. Then suddenly they abandoned the old bargain? Yes.  
86. Then Broughton made an effort to put the property under the Real Property Act? Yes.  
87. Whilst you were hovering between Chappel and Campbell, Broughton obtained the title? Yes.

TUESDAY, 8 SEPTEMBER, 1896.

Present:—

MR. LAW, | MR. J. C. L. FITZPATRICK.  
E. M. CLARK, ESQ., IN THE CHAIR.

Alfred Parry Long called in, sworn, and examined:—

- A. P. Long.  
8 Sept., 1896.
88. *Chairman.*] You are the Registrar-General? Yes.  
89. We have called you to produce the certificate of title in connection with the Gore and Artarmon Estate? I hand in a statement showing applications respecting the Gore and Artarmon Estates, and showing the portions of the same brought under the Real Property Act, also showing all the caveats against

against such applications, how they were disposed of, to whom the certificates of title were issued, and the references to such certificates, and how applications which were not passed were disposed of. [Appendix A 1.] I also produce a plan showing in green edging the grounds forming portion of such estate. [Appendix A 2.] These have been compiled and drawn under my personal direction and supervision.

A. P. Long.  
8 Sept., 1896.

90. I suppose you could not tell us anything about the loss of the Cumberland Register? I could not. I might say that that plan does not include some debatable portions of land which form a part of what is now considered a reserve. There are some outlying pieces, about which there is a dispute between Boyle and others and the Crown, as to whether they are Crown lands or not. There is nothing to show that they have ever been granted.

91. There has never been any application in connection with them? I think, however, that one of the applications related to one portion.

92. *Mr. Fitzpatrick.*] In what way was it dealt with? I think it still remains in the office. The objection was taken that the land did not appear to have been granted. It is necessary that the land must have been part of the land in one or more Crown grants, otherwise it is not capable of being brought under the Act.

93. In that case no definite decision has been arrived at? It has remained in abeyance for years. They have not been able to supply information as to what grant it formed part of.

94. *Chairman.*] Is it this 140 acres? I think there are only 30 or 40 acres in the piece to which I refer. The portion marked Reserve G,887, the application before referred to. It was by Chapman and Gallagher, but the objection was taken that the land had not been granted by the Crown, and that application was withdrawn.

95. *Mr. Fitzpatrick.*] You were speaking about the claim of a person named Boyle? Yes; he claimed a certain reserve; there was some dispute between him and the Crown; he was brought up for taking the pogs out, and he took the objection that it was a question of title, and the magistrate declined to deal with the matter.

Edward Arnold Bronsdon called in, sworn, and examined:—

96. *Chairman.*] What are you? I have charge of the Alienation Branch in the Lands Office.

97. The Lands Department lays claim to an area of land about 140 acres in extent; what claim has the Department to that land? The Crown claims the land shown on the lithograph (*handed in*) [Appendix B.] coloured green. The lithograph shows the 140 acres tinted green, and also an area of land indicated by green hatch lines, the latter of which formed the subject of an action in the Supreme Court between the Crown and Boyle. A verdict was given in favour of the Crown, and part of the land has since been sold.

E. A.  
Bronsdon.  
8 Sept., 1896.

98. Why did the Crown claim that land where the green hatch line was? Because the land had never been granted to any one.

99. It did not form a portion of Gore's Estate? It did not form a portion of any grant at all.

100. What is the area indicated by the green hatch line? I should say, approximately, from 40 to 50 acres.

101. I suppose you know the original area of the Gore Estate? The only grants in that locality to Gore himself were the 150 acres, block 349 and a small block of, I think, 10 acres, fronting Gore Cove, portion 185.

102. Then you have no knowledge as to how Gore become possessed of this other land or laid claim to it? It is stated in the correspondence that he acquired the other portions forming part of the estate from the original grantees, it is not shown how he acquired them.

103. Is it within your knowledge that a consolidated grant was issued to Gore for a thousand acres in 1883? We have no record of such a grant, nor is there a record of it in the Registrar-General's office.

104. Then if the Crown lays claim to this 40 acres why not also to those other areas supposed to be included in the Gore grant? Because grants have issued for the other areas of which there are records.

105. For each of those separate areas of land? Yes.

106. What are those red-tinted areas in the lithograph? The red edging shows the grants claimed by Gore in 1818, according to the correspondence in the Lands Department. The red tint shows the area for which certificates of title have been granted, and the red hatch lines show the areas for which applications for certificates of title have been made but are held in abeyance.

107. They are still held in abeyance? They were when a search was made some months ago by a draftsman in the Survey Office.

108. Grants had evidently never been issued of them? Yes, grants have issued.

109. With regard to the reserve, was not that land conveyed by the Department by deed of grant to the Municipal Council of Willoughby? The area was dedicated about 1869, the grant issued subsequently.

110. The title deeds were issued to the Borough Council? Yes; but the land has since been resumed.

111. How is it that these reserves are not shown on maps, such as Mr. Long has put in? The land has been resumed.

112. From those grantees? The dedication has been revoked. I presume that Mr. Long's tracing has been prepared to illustrate a particular thing.

113. The land was resumed, and the resumption money was paid to the persons interested? I do not know that any money has been paid to the council.

114. Perhaps you may tell us something about this Cumberland Register? It was stated, I think, by Mr. Quinlan in his evidence, that the Cumberland Register No. 28, was reported to have been stolen. That is quite a mistake. I produce here the report, dated 1st December, 1893, made by Judge Fitzhardinge, who was appointed a Royal Commission to inquire into certain matters relating to the working of the Deeds and Search Branch in the Registrar-General's Department. The following is an extract from his report:—

The only instance in which it has been stated that a register was mislaid, lost, or could not be found, was during the hearing of a case, *Campbell v. The Anglo Australian Investment Finance and Land Company (Limited)*, tried last September in the Supreme Court, before His Honor the Chief Justice. In that case it was reported that two witnesses had stated that they had, some months before the trial, inspected a register entitled, according to one witness, the "Cumberland Register, No. 28," and, according to the other, the "Cumberland Register," in searching for a copy of a grant said to have been

E. A.  
Bronsdon.  
8 Sept., 1896.

been signed by Sir Richard Bourke, and issued in 1833, for a parcel of land near to Gore Hill, North Shore. When each of those witnesses was in the witness box no register so entitled could be produced, and it was thereupon assumed that such a register was missing from the Registrar-General's Department. There was, in fact, no register missing or lost. The mistake arose through the register having been wrongly described.

Then it goes on to give the explanation of the matter by Mr. Pearson of the Registrar-General's Office:—

Mr. Pearson, one of the witnesses, explained the mistake as follows: In May preceding the trial he, with Mr. George Evans, desired to examine the Register of Grants to search for a copy of a grant alleged to bear date 1833. Register No. 28 was brought to them, and that register was, on examination, at once seen to contain a copy of grants, dated 1835, partly printed and partly written. That register was not further examined. The register was then brought from the search-room entitled "Special Grant Register C." That register contained copies of grants dated from 1833 to 1834, and was in manuscript only; that was carefully examined, but no copy was found of the alleged grant of 1833. That register then so examined was not produced at the Supreme Court at the trial named. The only register produced was Register No. 28, which had not been examined previously as it contained copies of grants for 1835 only. The grant register, which had been examined, was not produced, although it was in its usual position in the search room, and in error it had been called "Cumberland Register, No. 28." Had "Special Grant Register C" been asked for it could at once have been produced. Upon this matter I have examined Mr. George Evans and Mr. Pearson with the registers before them and each has explained the matter fully. Their examination is contained in answers to questions Nos. 3181 to 3219.

I wish also to mention conclusion No. 6 to which Judge Fitzhardinge arrived and which is as follows:—

"No register has at any time been lost or mislaid."

115. *Mr. Fitzpatrick.*] Does this register, which is alleged to have contained reference to a certain grant, actually contain a reference to that grant? No; it is stated by Mr. Pearson that it does not.

116. *Chairman.*] What date was that? 1st December, 1893.

117. Do you produce a letter from William Gore? Yes; it is addressed to the Honorable Alexander Macleay and is dated 12th April, 1835:

I beg leave to call to your recollection that through your interposition I had obtained the sanction of his late Excellency Lieutenant-General Darling for the consolidation of several grants of which this estate is constituted in accordance with the wish and desire of His Excellency Governor Macquarie, and likewise subsequently with the consent and approbation of Sir Thomas Brisbane. The above measure, which would no doubt contribute much to the value and security of this estate, prevent litigation and trouble with the Government, and greatly facilitate the future operations in this district of the Surveyor-General's Department by giving some definite site and boundary line to all my farms has not, I regret to acquaint you, been as yet carried into effect, through the occurrence from time to time of various untoward circumstances over which I had no possible control, having repeatedly made unavailing application for that purpose at the Colonial and Surveyor-General's offices. I have, therefore, now the honor to request that you will do me the favor of submitting this letter and application in behalf of myself and family to His Excellency Major-General Bourke that he will be graciously pleased to order that the consolidation of all the farms which constitute this estate shall be forthwith effected.

I have, &c.,

WILLIAM GORE.

118. That letter will go to show that he claims all those grants? Undoubtedly he claimed them. The correspondence shows that he mortgaged them to Wentworth.

119. And Wentworth disposed of them? An arrangement was made, with the consent of the Governor of the day, that upon Wentworth releasing that mortgage, and conveying the land to Mrs. Gore and her children, that Wentworth should receive a deposit of 1,500 acres of land at Ilawarra, in lieu of an equal area which had been promised to Mrs. Gore in trust for her children. At various times subsequently requests were made by Mr. Gore and his descendants for the issue of a consolidated grant for those farms, and as late as 1873 Messrs. Broughton and French, who claimed to be owners of the Gore Estate, made a similar application for a consolidated grant, but they did not ask for this 140 acres to be included in that grant.

120. Did they include the other 40 acres? No.

121. Gore's application would include that 140 acres and the 40 acres? There is some doubt about that. What he asked for definitely was a consolidated grant embracing all the original grants. Mrs. Gore in one of her letters says that there is certain unoccupied land, and asks for that land to be embraced in the consolidated grant; but the papers show that the Governor of the day ordered a form of application to be sent to Mrs. Gore for her to apply for the ungranted land which she wished to obtain possession of. It appears that Mrs. Gore died about that time, and the application was never made. As far as can be traced no grant was ever issued for that land.

122. I suppose the other claims of the Gore family have been admitted? No, I think not. There were reports made by various officers. I might refer to two, one made by Deputy Surveyor-General Thompson, of the 2nd of April, 1853, of which I can supply you with a copy. This report was adverse to the claim of the Gore family to the ungranted land, upon which the then Governor approved of their being informed, in effect, that their claim could not be entertained, and such letter was sent on the 29th April, 1853. There is also a report, at a later date, by Surveyor-General Maclean, dated 21st March, 1860, a copy of which also I will send to the Committee.

123. That was adverse? Yes; he virtually came to the same conclusion as Deputy Surveyor-General Thompson had come to. He said they had not a vestige of a claim except to the portions which had been granted.

124. I suppose your Department has taken steps to locate this land, and this reserve is the result of it? The location of these grants, the various portions shown on the lithograph, has been admitted by the Crown for many years.

125. You don't claim the reserve as surplus land in connection with the grant—it is the reserve left originally? It is land that was never granted by the Crown.

126. Unalienated Crown Lands? Yes.

127. He lays claim to the land not marked? I cannot say; it is land granted by the Crown.

128. They are not portions of the original Gore estate? The correspondence in the Department does not show that Gore claimed them.

129. *Mr. Fitzpatrick.*] Was there not some system adopted in the old days, when grants of that character were made, of lifting some titles, and is it not possible to discover whether the title to this particular block of land has been lifted by Baker and Taylor? There are records showing that the grants issued in 1794 to Taylor, Lamb, and Baker.

130. *Chairman.*] You have no idea who the present claimants are? No. I believe that Lamb's was one of the grants that were claimed by the Crown to have been cancelled.

131. *Mr. Fitzpatrick.*] The object of my question was to discover whether it might not have reverted to the Crown? Several grants were claimed by the Crown as having been cancelled, and a Supreme Court action took place in connection with portion 296. I think it was; at all events, the Crown was unable to produce any form of surrender, and the Supreme Court would not recognise a mere entry in the Register of the grant having been cancelled. The action went against the Crown. The Crown claimed that the grant had been cancelled, and there is a note in the Register to that effect, but the Court would not recognise that because no formal instrument of surrender could be produced. It is probable that no formal surrender was ever taken.

132. Towards the end of the last century grants were issued in the country, and the Crown has stepped in in a number of cases and taken possession of land that was known to have been granted, and which had passed through a dozen different hands—how was that brought about? I do not know of any case of that description. The Crown has claimed that certain lands had not formed part of any grant, but I never heard of a case in which the Crown stepped in where it was shown that the land had been granted.

133. In the Hawkesbury district it has been alleged that the Crown has taken possession and allowed the person in occupation to purchase, for a nominal amount, without auction sale? Any cases of that description would come through my hands, and I have not known of any such case during the six years that I have had charge of this branch. It may have happened before 1890.

134. *Chairman.*] Is there any other information which you could give the Committee in reference to this matter? I think not; the whole point of the case is, as I have stated, that this land, as far as the evidence of the Lands Department is concerned, has never been granted, except the grant to the Council in pursuance of the dedication of 1869. Various letters have been received during the last fifty years asking for a consolidated grant, but that has never been issued.

135. Then I take it that this supposed grant of 1833 certified hereto by two clerks of the late Mr. Burdett Smith is an invention? I understand that that is the conclusion the Court came to in Campbell's trial. I will send copies of a letter dated 17th October, 1873, from J. H. O. G. P. French, also a letter from Thomas Broughton, dated 13th October, 1873. The outcome of these letters was that it was decided, after a report by the Crown Solicitor, that the request for a consolidated grant could not be entertained, that the proper course for these people was, if they were the owners of the land, to get certificate of title under the Real Property Act.

136. Broughton has since obtained a certificate of title to some of these lands? I believe he has.

#### The Acting Deputy Surveyor-General to the Colonial Secretary.

Caveats of Mr. W. Bligh Gore and Mrs. French.

Sir,

Surveyor-General's Office, Sydney, 2 April, 1853.

1st. Under your blank cover of the 23rd November, 1852, was submitted for the report of the Deputy Surveyor-General a letter from Mr. W. Bligh Gore, dated the 18th November, 1852, laying claim to certain land adjoining the Gore estate, under measurement for sale.

2nd. Under your blank cover of the 18th of December, 1852, was received a letter in reference to the above letter from Mr. James Greer, dated the 24th November, 1852, on behalf of Mr. W. B. Gore, entering a caveat against the sale of the land under measurement, and promising to forward a plan.

3rd. Under your blank cover of the 18th of December, 1852, was received, in reference to former correspondence, a letter from Mr. James Greer on behalf of Mr. Bligh Gore, dated the 13th December, 1852, forwarding the promised plan showing the lands claimed by Mr. W. B. Gore.

4th. Under your blank cover of the 18th of December, 1852, was received a letter from Mrs. French, dated the 2nd December, 1852, stating that she and her sister have claims as well as their brother, Mr. W. B. Gore, and that the claims are founded upon a promise of 700 acres made to her mother, now deceased, by Governor Macquarie.

5th. Under your blank cover of the 8th of January, 1853, was received another letter from Mrs. French entering more fully into the subject, giving a copy of Governor Macquarie's promise, and also enclosing a plan.

6th. As during the multifarious correspondence of the last twenty years upon the subject of Mr. Gore's lands, no claim was sought to be established on the 700 acres promise, nor any claim made to the land said to have been held in pursuance of that promise, and now under measurement for sale, it was considered advisable to look over the old papers, and the Deputy Surveyor-General's letter, No. 53/57, of the 1st February last, was addressed to you accordingly, and by your letter, No. 53/130, of the 7th of the same month the papers were forwarded.

7th. On looking over these papers I find the original promise of Governor Macquarie, dated 16th August, 1819, for the 1,500 acres allowed to the late D'Arcy Wentworth which is stated to be "instead of the 700 acres some time since promised her," meaning Mrs. Gore, and as the promise of the 700 acres is dated the 2nd of January, 1818, the reference of the one to the other is evident.

8th. I find also among the papers, the memorial of Mr. Gore on behalf of his wife and children, dated 4th August, 1819, and replied to by Governor Macquarie, on the 16th as above. In this, allusion is made to the granting in trust of 700 acres to Mrs. Gore and her children and an augmentation of the promised grant solicited in order to enable the family to retain the lands on the North Shore.

9th. So far therefore, as the promise for the 700 acres alluded to by Mrs. French and her brother is concerned, it was evidently included in the 1,500 acres authorised for D'Arcy Wentworth. There is certainly a letter from Mr. McLeay to Mrs. Gore amongst the papers, offering to submit her application for land to the then Governor, but that letter is dated the 15th September, 1826, and did not result in any order.

10th. Under the Report of the Commissioner of Claims on the case No. 917, Mr. Gore was found to be in possession merely of certain land about 120 acres, which it is intended to confirm to him on his surrendering to the Queen four of his detached small grants in lieu thereof, this arrangement has not, however, been perfected, the land is still reserved, but this land forms no part of that which has been measured for sale, and is now claimed by the Gore family in satisfaction of the 700 acres order, nor has the Gore family apparently any claim whatever thereto, and it will therefore be for His Excellency the Governor-General to decide if it may be sold or not.

11th. The several letters and plans transmitted under blank cover are returned herewith, also the papers and deeds sent in your letter No. 53/130 of the (date omitted). I have, &c.,

JOHN THOMPSON.

I conclude the parties interested may be apprised in terms of the 7th or 8th paragraph of this report, and that the claim to the 700 acres of land cannot now be entertained by the Government. The Acting Deputy Surveyor-General to be authorised to have the land referred to in the 10th paragraph brought forward for sale.

M.F., 8th. Approved—C.A.F., 20th.

Mr. French, Mr. Greer, and Deputy Surveyor-General, 29th April, 1853.

Madam,

Colonial Secretary's Office, Sydney, 3 May, 1853.

Referring to my letter to you of the 8th January last on the subject of the claim of the late Mr. Gore's family to 700 acres of land adjoining the Gore Estate at the North Shore, now under measurement for sale, and which you alleged was promised to the late Mrs. Gore by Governor Macquarie, I have the honor, by direction of His Excellency the Governor-General, to inform you that it now appears that the memorial of Mr. Gore, on behalf of his wife and children, dated the 4th April, 1819, was replied to by Governor Macquarie on the 16th of that month. In this, allusion is made to the granting in trust of 700 acres to Mrs. Gore and her children, and to an augmentation of the promised grant solicited in order to enable the family to retain the lands on the North Shore.

E. A. Bronsdon.  
8 Sept., 1896.

2. It further appears that the original promise of Governor Macquarie, dated the 16th August, 1819, for the 1,500 acres authorised for the late Mr. D'Arcy Wentworth, in trust for your family, is stated to be "instead of the 700 acres recently promised to Mrs. Gore," and that as the promise of the 700 acres is dated the 2nd January, 1818, the reference of the one to the other is evident.

3. Under these circumstances (it being apparent that the 700 acres of land alluded to by you is included in the 1,500 acres authorised for the late Mr. D'Arcy Wentworth, in trust) His Excellency regrets that your application cannot now be entertained by the Government, of which the Acting Deputy Surveyor-General has been apprised, and requested to have the land in question measured and brought forward for sale at an early date.

Mrs. Charlotte S. W. Ffrench, Glebe, Sydney.

I have, &c.,  
E. DEAS-THOMSON.

Sir,

Colonial Secretary's Office, Sydney, 29 April [3], 1853.

Referring to my letter of the 18th of December last, on the subject of the claim preferred by you on behalf of Mr. W. B. Gore to certain land adjoining the Gore Estate at the North Shore, alleged to have been promised by Governor Macquarie, I have the honor, by the direction of the Governor-General, to annex for your information an extract from a report from the Acting Deputy Surveyor-General on this subject, and to state (as it is very evident that the whole of the land authorised for the late Mr. Gore's family is comprised in the 1,500 acres authorised for the late Mr. D'Arcy Wentworth in trust) that His Excellency regrets that the claim preferred by you on behalf Mr. Gore cannot now be entertained by the Government.

2. Instructions have accordingly been issued to the Acting Deputy Surveyor-General to proceed with the measurement of the land in question, in order that the same may be brought forward for sale on an early date.

James Greer, Esq. (attorney for Mr. W. B. Gore), 16, Wentworth-place, Sydney.

I have, &c.,  
E. DEAS-THOMSON.

Sir,

Colonial Secretary's Office, Sydney, 29 April [2 May], 1853.

In reference to your report of the 2nd instant, No. 160, on the subject of the claim preferred on behalf of the late Mr. Gore's family, for certain land adjoining the Gore Estate, now under measurement for sale, and which, it is alleged, was promised to the late Mr. Gore by Governor Macquarie, I have the honor to inform you that the Governor-General concurs with you in opinion that the whole of the land authorised for the late Mr. Gore's family is embraced in the 1,500 acres authorised for the late Mr. D'Arcy Wentworth in trust, and that His Excellency has, therefore, been pleased to authorise the land in question being measured and brought forward for sale as early as convenient, of which the parties interested have been apprised.

The Acting Deputy Surveyor-General.

I have, &c.,  
E. DEAS-THOMSON.

The Acting Surveyor-General to The Under Secretary for Lands.

Respecting certain Claims of the Gore Family to Land in the Parish of Willoughby, North Shore.

Sir,

Surveyor-General's Office, Sydney, 21 March, 1860.

The unsettled state of the claims which the representatives of the late Mrs. Gore have from time to time brought under the notice of the Government to certain land in the parish of Willoughby, on the North Shore, having been long known to me, I considered it advisable, as immediately after my taking charge of this department as other more pressing matters would permit, to examine the documents connected with such claims, in order that I might feel myself in a position to submit to the Government for approval such a proposal for the adjustment of the demand as might secure the public rights and yet be just, and even considerate, to the parties interested.

No. 1.—Surveyor-General's letter, dated 1st February, 1851, No. 31,301.

No. 2.—Mrs. Gore's letter, dated 22nd February, 1852, No. 32,2308, and *vide* *ibid.*

No. 3.—Surveyor-General's letter, dated 8th October, 1851, No. 31,339.

No. 4.—Letters of Mr. Greer, dated 4th November, and 13th December, 1852, and *plun.*

No. 5.—Letter of Deputy Surveyor-General, dated 2nd April, 1853, No. 53/3009—53/160.

No. 6.—Memorial of Gore's representatives, No. 54/6748, and *vide* *ibid.*

No. 7.—Memorial of Gore's representatives, No. 54/6748, and *vide* *ibid.*

3. Before, however, more particularly stating what is claimed, and what I think may be allowed, I would remark that the delay is mainly attributed to the parties themselves, in their early inattention, from whatever cause; to their indistinct, and confused, if not shifting ground of claims; and to their encumbering what might have been admitted, with what was obviously inadmissible, and that, therefore, it would not be advisable to allow that unauthorised occupation, *ad interim*, is as a reason for now admitting as a fair claim of occupation, what in the earlier period would have been rejected, if fairly set forth.

4. I take the letters and plan of Mr. Solicitor Greer, as defining the claim which his clients ultimately wished to abide by, and while I see no reason to question the alienation by the Crown, and the possible right of property by the Gore family in the lands mentioned in the margin, I beg to say that it exhibits a space of land to which not a vestige of a claim can be supported. The basis of the claim is the mortgage to Mr. Wentworth referred to in the papers to which I have above alluded, and thus does not convey the land within the space marked by the red letters A B C D E and F; it does not convey any of the large tract of land coloured blue on the sketch, nor does it convey the 25 acres of Webber, the 25 acres of Tilley, or the 25 acres of Evans; to all the remainder, the claim of the representatives of Gore may be admitted; and as a matter of grace even to two of the three last mentioned grants, viz., Tilley's and Evans', because, as regards Tilley's, although not granted, it has always appeared as alienated in the maps, and Evans', although the entry of the deed is marked as cancelled, there is a pencil note in the Register, in the handwriting of the late Deputy Surveyor-General, as noted in the margin, and if the land be out of the Crown, it is immaterial to the Government in whose possession it remains.

Note in Register—"Cancelled—This grant being found in the Colonial Secretary's Office, with a note thereon "Demised to the Crown." 15 August, 1854. D. D. MANN, C. C. K."

Note against the above by the late Deputy Surveyor-General Thompson:—Humphrey Evans has two farms at Lane Cove, Nos. 3 and 26 in printed list and old maps. There is, however, but this one registration, and this appears by the lists to apply to No. 3, and consequently the memo. of cancellation is erroneous.

5. These two grants may therefore perhaps be allowed to remain in their possession. It would be right further to recognise their claim to Williamson's grant of 44 acres, to Asser's grant of 30 acres, and to Jennings's grant of 30 acres, for although the situation of these grants is not shown on the maps, and the Commissioners of the Court of Claims state, in their report on case 917, that they have satisfied themselves of the general position of the two first deeds have issued and the properties are enumerated in the mortgage to Mr. Wentworth. These three portions, amounting to 104 acres, may, therefore, be located to the claimants, in the position attributed by the Commissioners to the land so long occupied by Gore's family, and indicated on the sketch by the letters A B C D E and F, embracing about 100 acres, and adding thereto to complete the 104 acres, the small triangular portion, marked\*, containing about 4 acres.

6. Beyond this I cannot discover any claim, and by authorising a definite appropriation to this extent, and by leaving the claimants undisturbed in the possession of Tilley's and Evans' grants, the Government gives them, I think, the most ample consideration.

7. I abstain from entering on the preposterous claim, in one place alluded to as Gore's promise to a further 700 acres, on an order to Mr. Gore, because it can be most satisfactorily shown that that order merged in a subsequent order for 1,500 acres grant made to the late D. Wentworth, at Illawarra, on condition of his abandoning his mortgage on the lands of the Gore family at the North Shore.

8. I would, in conclusion, beg earnestly to advise:—1st. That the parties alluded to may be placed in possession of the 104 acres in the situation stated, in lieu of Williamson's, Asser's, and Jennings' grants. 2nd. That they may be allowed to remain undisturbed in occupation of Tilley's and Evans' farms. 3rd. That the residue of the vacant Crown lands in this situation may be subdivided and forthwith sold, to close this long-voxed and unsatisfactory business.

I have, &c.,  
A. G. McLEAN,  
Acting Surveyor-General.

The

W. Gore	150	acres.
J. Roberts	25	
J. Sawyer	25	
C. Leder	25	
D. Curry	25	
C. Robinson	25	
P. Dargin	25	
G. Whitfield	25	
W. Packer	25	
— Turner	25	
Jno. Darke	25	
J. Williamson	44	
H. Asser	30	
T. Jennings	30	

\*Part of paper containing mark is destroyed.

## ON THE GORE AND ARTARMON ESTATES, NORTH SHORE.

The Honorable Minister for Lands,—  
Sir,

Bradley, near Sydney, 13 October, 1873.

E. A.  
Bronsdon.

Referring to the voluminous correspondence of the late William Gore, Esq., and members of his family, on their claims to certain lands at North Willoughby, and also to the title deeds which W. Gore surrendered to the Colonial Secretary for the purpose of getting a consolidated grant defining the boundaries, in lieu of several undefined small grants of land, etc., etc.

8 Sept., 1896

Also the reports of the late Acting Surveyor-General, H. McLean, Esq., and Commissioners of Titles, with evidence of E. J. H. Knapp and Mr. William Henry, taken before said (as per margin) Commissioners. 41,10243.

I beg respectfully to state, that with a sincere desire to an amicable settlement, and to avoid litigation in this matter, I, as mortgagee in the Gore Estate, and John Henry O. G. P. Ffrench, heir at law of the late William Gore, having submitted our respective claims for equitable adjustment to our respective attorneys, I beg herewith to submit a deed of conveyance, duly executed, of the lands in question, which the Gore family have had in their possession for upwards of 60 (sixty) years. And I beg to submit the remaining original old grants which are undefined, and also a schedule of deeds and documents connected with the Gore Estate, etc., etc.

I have the honor to request that one consolidated deed of grant may be issued to the said John Henry O. G. P. Ffrench, Esq., of the land comprised within the lines coloured blue on the plan endorsed on the deed of conveyance, duly executed by Mr. Ffrench, Miss Gore, and myself, being in all 100a. 2r. 19p., viz., 56a. 2r. 19p. of 104 acres allocated by the Government in lieu of Asser's, Jennings', and Williamson's grants, and also the whole of Curry's and Robinson's grants of 25 acres each.

I have the honor respectfully to request that properly-defined deeds of grants may also be issued to me of the residue of the said Gore Estate, situate at North Willoughby, as allocated by the Government, and comprising undefined old grants as set forth on the other side. I believe Gore's 150-acre and 10-acre grants to be sufficiently defined, but I fancy it will be necessary to point out on the land how the Government allocate the different farms. I beg to add, that an application of like nature will be received from Mr. Ffrench.

I have, &c.,  
THOS. BROUGHTON.

SCHEDULE of undefined grants, William Gore's Estate, Thomas Broughton's Portion.

William Packer's 25 acres; Williamson's and Jennings' (?) 43a. 1r. 25p.; Asser's 4a. 2r.; C. Loder's 25 acres; J. Sawyer's 25 acres; G. Tilley's 25 acres; J. Roberts' 25 acres; G. Whitfield, 25 acres; J. Dark's 25 acres; D. Carr's 25 acres; Ben. Johns' 25 acres; Thos. Baker's 25 acres; H. Evans' 25 acres; Hy. Lamb's 25 acres; Peter Dargan's 25 acres; R. Turner's 25 acres; Wright's 30 acres.

N.B.—I should like to have returned to me, when this case is disposed of, the deeds of conveyance from Mr. Ffrench and Miss Gore and the deed from C. H. Nichols, with the schedule of deeds and documents of titles to the Gore Estate at North Willoughby.

THOMAS BROUGHTON.

The Honorable the Minister for Lands,—  
Sir,

Carlotta, Gore Hill, North Shore, 17 October, 1873, By St. Leonards.

Referring to the correspondence of the late Mr. William Gore and members of his family upon the subject of their claims to certain lands in the parish of Willoughby, on the North Shore, known as the Artarmon Estate, and also to the title deeds which Mr. Gore surrendered many years ago to the then Colonial Secretary for the purpose of obtaining a consolidated grant of the same defining the boundaries which were not defined in the original grants. I have the honor to respectfully inform you that with a desire to avoid any further litigation in this matter, and to conserve the recommendation contained in a report to the Government by the late Mr. Acting Surveyor-General McLean, Mr. Thomas Broughton, mortgagee of the estate in question, and myself, heir at law of the late Mr. W. Gore, have joined in the execution of a deed of conveyance of the before-mentioned estate by which the lands enumerated in No. 1 hereto have been conveyed to myself, and the lands enumerated in No. 1 hereto have been conveyed to myself, and the lands enumerated in Schedule No. 2 have been conveyed to Mr. Broughton. In view of the final settlement of this matter as above, I have now the honor to request that in lieu of the original deeds of grant of the estate, fresh deeds of grant may be issued as follows, viz.:

1. To myself a consolidated grant of 106 acres 2 roods 19 perches being the land specified in Schedule No. 1 hereto, which land is in my sole possession and has been in the Gore family for upwards of sixty years.
2. To Mr. Thos. Broughton fresh grant or grants of the portions of the estate specified in Schedule 2. I have to state that Mr. Broughton will also address you upon the subject of this letter, and that in furtherance of our respective applications, he will submit the original grants of W. Gore's 150 acres, Roberts' 25 acres, Asser's 30 acres, and Packer's 25 acres, which with Robinson's grant, in my own possession constitute the deeds of grant of the Artarmon Estate. Under the foregoing circumstances, I venture to hope that the respective applications of Mr. Broughton and myself, under the deed of conveyance before mentioned, may receive favourable consideration at the hands of the Government. I beg to add, however, that pending the carrying into effect of the proposed arrangement by the Government, the caveat lodged by me against the issue to any person of the title deeds deposited with the Government by the late Mr. Wm. Gore is not in any way to be prejudiced or affected by this application, but will, when necessary, form the subject of a future communication from me and also probably from Mr. Broughton.

I have, &c.,  
J. H. O. G. P. FFRENCH.

SCHEDULE No. 1, MR. FFRENCH'S PORTION.

Twenty-five acres, D. Curry's grant; 25 acres, C. Robinson's grant; 56 acres 2 roods 19 perches. The eastern-most portion of 104 acres allocated by the Government for Williamson's, Asser's, and Jennings' grants. The above land is comprised within lines coloured blue upon the plan endorsed on the conveyance before referred to. It contains the site of the late Mr. Gore's residence, and has a frontage to the Lane Cove Road.

SCHEDULE No. 2, MR. BROUGHTON'S PORTION.

One hundred and fifty acres, W. Gore's grant; 25 acres, J. Roberts' grant; 25 acres, G. Whitfield's grant; 25 acres, J. Dark's grant; 25 acres, D. Carr's grant; 25 acres, Chas. Loder's grant; 25 acres, J. Sawyer's grant; 25 acres, G. Tilley's grant; 25 acres, W. Packer's grant; 25 acres, P. Dargan's grant; 25 acres, H. Evan's grant; 25 acres, Ben. John's grant; 25 acres, Thos. Baker's grant; 25 acres, H. Lamb's grant; 25 acres, R. Turner's grant; 47 acres 3 roods 9 perches being the western-most portion of the 104 acres allocated as above mentioned for Williamson's, Asser's, and Jennings' grants.

James Bereyne called in, sworn, and examined:—

137. *Chairman.*] What are you? A labourer.
138. You claim to own an acre of land in the Gore Estate? Yes.
139. How did you acquire it? I bought it from Mr. Boyle.
140. What farm does it form a part of? Dargan's 25 acres.
141. But they have built a public school on that land, have they not? Yes; the Government resumed my acre and the one adjoining.
142. Did they pay you for your acre? The Government told me they were going to resume it, that I was to value it, and that they would give me more for it than I would get at public auction. I valued it the next day at £4 a foot.
143. But they paid the money to Broughton, did they not? Yes, owing to some rambling story he told them.
144. Did Broughton claim Dargan's farm? Yes; when I put mine under Torrens' title they asked me if anybody claimed it, and I said yes, Broughton.
145. You used to act as agent for Broughton, did you not? I acted as Broughton's agent about twelve years ago.

J. Bereyne.  
8 Sept., 1896.

- J. Bereyne.  
8 Sept., 1896.
146. Do you know what farms he claims there? He claims Dargon's, Evans's, Lamb's, Baker's, Artarmon's, Carr's, Loder's, Sawyer's, Tilley's, Roberts's, Whitfield's, Dark's, and Johns's.
147. You know all these estates? Yes, every one.
148. And do you know that Gore alway's laid claim to them? William Bligh Gore was the real owner, and Boyle and Gore were partners.
149. You paid Boyle for this acre of land? I did.
150. How much? £5. Forty years ago he offered me 6 acres as a gift. I had a billet then under the Government at Circular Quay and I was not so much in need of it, but when I began to get worse off I touched up his memory about it, and at last I bought an acre for £5.
151. Did you get the deeds? Yes.
152. Did you know Mr. Ffrench? Yes; I was at his funeral. He told me before he died that he would shoot Mr. Broughton before Mr. Broughton should humbug him. I believe that that was the cause of his death. He told me three days before he shot himself on Gore's Hill that if I would go with him to the station he would shoot Broughton and drive another bullet through himself. I said, "Don't do that"; I said, "Don't spill blood." Ffrench said he was of gentle descent, and he would not be humbugged by Broughton.
153. The general report was that he shot himself through Broughton? He shot himself.

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William Reynolds called in, sworn, and examined:—

- W. Reynolds.  
8 Sept., 1896.
154. *Chairman.*] You know all about this Gore Estate? I think I do.
155. How long have you known it? About sixty-two years. It always went by the name of the Gore Estate. I used to get timber off it.
156. And you used to pay the money to Gore? Yes.
157. He laid claim to it? Yes.
158. Who else laid claim to it? Sometimes one member of the family, sometimes another.
159. Did Green ever lay claim to it? No.
160. Did Broughton? No.
161. You have no idea of the area of the land? No. My 40 acres adjoined the 150 acres.
162. Did you have 40 acres? Yes; alongside the Artarmon Estate, Brown's ground.
163. Did you have that 40 acres? Yes, I had it thirty-three years.
164. Do you know anything in regard to some land that the Government are claiming—a reserve near the railway station? Yes, there are more than 50 acres, I think.
165. Part of that adjoins the Artarmon Estate; then it comes along by the railway? Yes; about 50 acres are Wells's. I went near it nearly 50 years ago to survey that estate. I was going to buy it. Wells said it was not occupied.
166. You always paid your rent to Gore? Yes.
167. And Gore was always the admitted owner of the property? Yes, till the old gentlemen died; then young Willie Gore came in.

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Frederick Henry Holland called in, sworn, and examined:—

- F. H. Holland.  
8 Sept., 1896.
168. *Chairman.*] You were caretaker in connection with this Gore Estate for Sir Alexander Stuart? Yes.
169. He represented the Bank of New South Wales, did he not? Yes.
170. What area of land did you take care of? I suppose about 300 acres.
171. What did it comprise? There would hardly be 300 acres. Boyle was outside the far side fence; he had about 12 acres. There was the Spiros taken out of it. It comprised about 300 acres altogether.
172. Is the land still held by the Bank of New South Wales? I do not know who owns it now.
173. Did Broughton lay any claim to it? No.
174. You do not know what farms it comprises? No; I know it was fenced in, and it was taken out of my hands and put into the hands of a man named M'Kenzie.
175. Is it still fenced? No; after it was taken out of my hands I was one day going down to the Shore, when I met Bereyne near England's Hotel. He said, "Is it true that they have taken the Artarmon Estate out of your hands?" I said, "Yes." And he said, "Then I will slaughter that fence." Then he went with his men and cut down the fence, and they commenced to cut down the timber. It was beautiful timber.
176. How long ago was that? Twelve or thirteen years.
177. In whose interests was Bereyne acting? I cannot say. They cut down all the wood, made posts, posts and rails, and ships' tunnels and logs of it, and carted it away. Nobody stopped them.
178. *Mr. Fitzpatrick.*] Who were the claimants at that time? Sir Alexander Stuart. We never heard of Broughton then. It is only lately that Broughton has made any claim at all.
179. *Chairman.*] How long is it since Broughton first came into it? I do not know exactly. Before it was fenced a wooden house was put up. I carted it from Wilson's place, near the Spit. Mr. Wilson was nephew of Sir Alexander Stuart. A man named Bennett had charge of the house. Bereyne and some other man upset the house with props. They got Bennett outside. He lay down on the ground, and they carried him out on to the road.
180. *Mr. Law.*] Do you remember what year Sir A. Stuart and the Bank had an interest in it? It is twelve or thirteen years ago.
181. How many years had you charge of it? Only a few months.
182. *Chairman.*] At that time possession seemed to be held by fighting? Yes.

THURSDAY, 17 SEPTEMBER, 1896.

Present:—

MR. O'SULLIVAN, | MR. HOWARTH,  
MR. LAW.

E. M. CLARK, Esq., IN THE CHAIR.

S. M. Quinlan, Esq., solicitor, appeared on behalf of Mr. J. H. O. Ffrench.

William Kingston Cook sworn and examined:—

W. K. Cook.

17 Sept., 1896.

183. *Chairman.*] What are you? A builder and contractor.

184. I understand that you purchased a portion of the Gore and Artamon Estate at one time? I did a long time ago. I became acquainted with Mr. Ffrench who afterwards became a partner with Mr. Broughton. I also became acquainted with Mr. Richard Harnett, and wishing to have a farm and orchard I agreed to take Gore House from him. Whilst there I was visited by Mr. Ffrench who lived on the adjoining hill. He was then married to a Miss Sollings, and had two little children—girl and boy. He, recognising me, visited my house. The daughter of a man named James Brain was servant at Mr. Ffrench's at this time. I remember that on one occasion when visiting Ffrench she brought me some iced water-melon. I understood from Mr. Ffrench that he had courted Harnett's daughter, and at one time he, Ffrench, had foolishly given him possession of Gore House. Mr. Ffrench said that Mr. Harnett had no power to underlet, and that if I would give up possession he would give me a piece of land on the 25 acres of ground just beyond the Nichol's Estate on the Lane Cove Road, but I was not to tell Mr. Broughton. Mr. Ffrench and I visited each other several times. Mr. Ffrench confided to me the fact that he had been a poor boy at the Turon diggings. At the time I referred to he was second pay-clerk in the Treasury, having £600 a year; Mr. Coonan was the head clerk. I visited Mr. Ffrench at the Treasury several times to talk matters over. Mr. Ffrench informed me in conversation that these grants were 25-acre grants to old veterans, but some of the veterans had died, drank themselves to death in Sydney, and the remainder had been collected by the British Government and shipped home again. I understood from Mr. Ffrench that his grandfather, Mr. Gore, had been concerned in some rebellion in Ireland and deported here—his grandfather became Sheriff for a time of Sydney, and became possessed of those grounds. There were no deeds. He said that his grandfather told him that he had had the deeds of some of the property, and they had been sent into the Treasury, but the Treasury officials had lost them. He had had a most voluminous correspondence with the Government, but they refused to recognise his claim. He also said that his family to create a title to the land had exchanged with a member of the Wentworth family. I fancy it was D'Arcy Wentworth, for 1,500 acres of land somewhere in the Illawarra district. Then to make the thing more secure they had re-exchanged, taken their old land back again, and given Wentworth his 1,500 acres back. He also told me that his grandfather and grandmother were buried on the land a few feet from the Lane Cove Road to secure the title. He also said that he understood that his grandfather had shot a soldier for cutting grass on the land. That the old man had been tried for it, and been found guilty, and before the Judge could pass sentence he cut his throat in the Court. He was then taken away to a hospital. Time passed, and the sentence was never carried out. The regiment to which the soldier belonged went home to England, and his grandfather was then exiled to North Shore and told never to come into Sydney again. Then the old man commenced rearing poultry. After this Mr. Ffrench told me his wife was an ambitious woman, and she desired to found a family there, and she did not like him taking me in against Mr. Broughton. She thought he had better stick to Mr. Broughton and see the matter out. Then Mr. Ffrench said he would send a man to me who had some papers connected with Dargan's farm—a man named Jenkins. I produce an abstract made at the time of the title which this man had:—

Twenty-five acres of land at North Willoughby; granted to Peter Dargan, 13th December, 1794.—Gt. 334, R.E.G. No. 1, folio No. 139.—Peter Dargan, jr., labourer, of Sydney, heir and only child of Peter Dargan, sr., sold the above 25-acre grant to one William Palmer Moffatt, surveyor, of Sydney, for the sum of £250 sterling, in September, 1854. Witness—William Beddin and John Valentine Wareham, law stationer. (Book 33, September, 1854; date of deed 1st August, 1854; received in office, 11th August, 1854; Book 34.) Ending 27th July, 1863.—Book 83, Moffatt W. P., Thomas H. Sindon, 742, deposit deed 25 acres, St. Leonards, North Shore, also policy of insurance (abbreviated copy); T. H. Sindon, Esq., of Mudgee, has this day drawn a six-months' bill in my favour for £250. I place in his hands as coll. security a deed of 25 acres of land situated at North Willoughby, &c., &c.; also a policy of insurance for £500 on my own life, dated 28th May, 1857, originally issued by the Professional Life Assurance Society, incorporated with the European Assurance Society, 27th April, 1864; policy paid to 28th May, 1864 (European Life Assurance Company ceased paying premiums in 1871; when it wound up, no claim was made for a creditor's dividend by W.P.M. If he died before that the policy was paid; if not, the policy is now waste-paper; in 29th June, 1874, books sent to England.)

Both these instruments to be retained by T. H. Sindon as security by way of equitable mortgage until he be repaid the amount he has to pay upon the said promissory note for £250, if any, to sell or dispose of by public or private sale, and to seal and deliver to the said purchaser as good and full a title as if I were present and ratifying the same in person; and I hereby appoint him my true and lawful attorney, and he may sell by public or private sale for any sum over £250, but not under £250, and if I repay him the £250, supposing he has had to pay that amount on the bill drawn, he is to redeliver to me or my written order my deeds of land and life policy. William Palmer Moffatt, Witness.—Edward Clarke, attorney's clerk, Mudgee. Before George Warburton, Commissioner for Affidavits. Registered by Charles Hallett, of Sydney, 27th June, 1865.

That was given to me as the man's title. Mr. Ffrench sent him to me. I had paid a deposit on the grant—Dargan's farm. I then put some building material on the ground for the purpose of erecting a house, and a man named James Brain, who afterwards said he acted to the order of Mr. Broughton, came and stole the stuff from the ground; I caught him on the ground with his dray; he had got some timber belonging to me. I went to the Water Police Court, and took out a summons against him for stealing my building material, and I subpoenaed Ffrench to give evidence. I went to the Treasury, and we had a row. The head clerk said I cannot allow this in here, you two gentlemen must go outside and settle your business. Ffrench said he would not come forward. I said he had acted as a traitor to let me into this matter. It was cowardly. He was a nice man, a ladylike man, one of those gentle simple kind of creatures. A peculiar circumstance occurred. Mr. Broughton was on the Bench, showing an unregistered document to the J's.P. There were a number of magistrates there. One of the lawyers said, "you can object to Mr. Broughton sitting in that case; he is claiming the property." I told Mr. Broughton that  
he

W. K. Cook, he had no right on the Bench. He said that he was a J.P., but I said that he had no right to act in a case in which he claimed to have an interest. Mr. Broughton had to leave the Bench. The case came on, and it was treated as a disputed title case, and it had to go to the Supreme Court. Mr. M'Carthy, of Robertson, Fisher, and M'Carty (Mr. Broughton's solicitors), appeared for James Brain. Mr. Broughton produced what they called a particularly clean unregistered document to prove his title to the land, and Mr. Stephen said, "Gentlemen, I do not tell you that Mr. Broughton has not lent £14,000, but I ask you, as business men, if you would lend £14,000 on a piece of paper like that, without going into the bush to see who was living on the land." Previous to this I had offered to buy Gore House, and 25 acres of land round it, from Mr. Ffrench, and Mr. Ffrench and Mr. Broughton met me one evening at Gore House, and asked what I would give. After some conversation, I said £250. Time was given me to consider this. I received an intimation that a Mr. George Wickham, afterwards Coroner of Parramatta, had bought a title to the Artarmon Estate for £1 10s. at a sheriff's sale; also that some man—Jackson I think was his name—with teams, had given £16 for the Artarmon Estate, had cut several hundred tons of wood off the estate, and then gone away and left it. I had nothing more to do with it. I afterwards gave information to Mr. Harnett through Mr. Felmingham, chemist of King-street, his son-in-law. I gave them notice that there was a title in existence. He afterwards bought the title, and they were to give me something for my information, and Felmingham afterwards asked me to call at the office. I found afterwards that they had got the title. I went to Alexander Stuart about it. I was to have had £200 when they obtained the title, and 10 per cent. on the sum the land sold for. I calculated about £2,000. I produce Sir A. Stuart's letter, *re* same (£2,000, and so much down as soon as they got the title). I have a letter from Alexander Stuart, telling me that I slept on my rights, and that I had better see Felmingham's executor.

Mr. Wm. Kingston Cook, 24 University-terrace, Yurong-street,—  
Dear Sir,

Sydney, 31 December, 1885.

In reply to yours of 23rd instant, I must disclaim all connection with any arrangements made between you and Mr. Felmingham, acting on behalf of myself and Mr. Harnett, as you say. I had no knowledge of any transaction between you and Mr. Felmingham, nor had I ever any interest in Gore Hill. I am aware that Mr. Harnett once occupied Gore Hill, and he may have had some interest in obtaining the Sheriff's title you write about, but it could be of no use to me, as the property I was interested in, Artarmon Estate, was quite separate from Gore Hill property.

It is a pity that you did not see about the matter sooner, while Mr. Felmingham was alive, or while his affairs were being administered by Mr. Harnett.

Yours, &c.,

ALEX. STUART.

But he had no money, and I never bothered further about it. Before this, I bought from John Boyle, Tylor's farm for £250. Ellis and Makinson drew the deeds or agreement which Mr. Boyle was to pay for, but he never did. Boyle introduced me to them as acting for him. I lived at this farm some time. There was a man named Ben Smith, a runaway American sailor. He was a man who used to drink about the bush. I had a valuable cow shot through the neck, the legs of another broken. I sold one to a butcher for £5 2s. 6d., the other for 6s. to Hammond, of Lano Cove. I had my horses killed; a horse named Porter I had killed, another named Captain; another named Bess was injured in the back. A horse named Jack was put in a waterhole, and beaten to death. I prosecuted the man Ben Smith, and he was committed for trial. Mr. Broughton's lawyer appeared to defend him, but there was a difference of ten minutes about the time. I could not tell the time by the clock, and the moon was brought into the question. I could not swear exactly, but Ben Smith was seen on the Lano Cove Road by some night-men. I had a mob of prize calves killed, all except two, that I sold to Mr. Ffrench. These two, Maggie Brain, Ffrench's servant, daughter of James Brain, reared with a bottle. I had over 600 head of poultry poisoned. I took the insides of several down to the Government Analyst. The Government Analyst consulted with his colleagues, and they decided that poisoning was not cruelty. I received an intimation that the bush was to be set on fire. I was told by an old bush woman named Betty, over 80 years of age, for whom I built a little hut for her to live in. She went over to Ben Smith's, and brought back the news that the bush was to be set on fire. I got all the grass burnt off round my place, and the bush was set on fire, and every time the fire went out, it was lighted up again.

185. Who do you think did it? Ben Smith used to go over to Ffrench's place, and they were the people who used to annoy me. Ffrench was dead at this time, but his wife lived near my place. Mrs. Ffrench about this time was negotiating the sale of Gore House to a Mr. Richard Sheldon for a rental and £1,000, providing she could give him a title within fourteen years; and Sheldon soon after entered into possession of Gore House. Then the Bank of New South Wales brought an action of ejectment against me. I produce the writ:—

In the Supreme Court of New South Wales, }  
Cumberland, to wit. }

On the 2nd day of November, in the year of our Lord 1875.

On the day and year above written a writ of our Lady the Queen issued forth of this Court in these words, that is to say:—Victoria, by the grace of God of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith, &c., &c. To John Boyle, Owen Boyle, Speidro Ann Lenthall, Edmund Henry Lenthall, and Kingston Cooke, and all persons entitled to defend the possession of all that piece or parcel of land (save and excepting 12 acres thereof, already reserved by John Boyle) containing by admeasurement 150 acres more or less, known as the Artarmon Grant to William Gore, Esq., by Governor Macquarie, lying and situate in the county of Cumberland, parish of Willoughby, and district of Hunter's Hill. Bounded on the south side by an east line of 36 chains, commencing at Roberts' east corner; on the east by a north line of 36 chains; on the north by a west line of 52 chains to the line marked for Nicholls' and Roberts' farms, by a road 1 chain wide, reserved on the west side. Also, all that piece or parcel of land called Webber's, lying and situate in the county of Cumberland, parish of Willoughby, and district of Hunter's Hill, containing by admeasurement 25 acres more or less, commencing at the north corner of that portion called Roberts' 25 acres, with the Artarmon west line; bounded on the north-east by a line north 39 degrees west 16 chains; on the north-west by a line south 51 degrees west 16 chains; on the south-west by Reddishe's 25-acres portion, separated by a line bearing south 39 degrees east 16 chains to Roberts' south-east corner; and on the south-east by that farm to the commencing point. Also, all that piece or parcel of land (saving and excepting the 5 acres thereof already conveyed to the separate use of Mrs. Ann Lenthall, and also saving and excepting the 1/2 acre and 12 perches thereof already conveyed to Mr. Edmund Henry Lenthall, by indenture, dated the 15th day of November, 1860), situate in the county of Cumberland, parish of Willoughby, and district of Hunter's Hill, containing 25 perches (more or less), called Tilley's farm; bounded on the north-west by a portion of land marked "Whitfield," commencing at the south corner of Roberts' 25 acres; and separated on the north-west from Whitfield's by a line south 51 degrees west 16 chains; on the south-west by Sawyer's 25 acres, separated by a line south 39 degrees east 16 chains; on the south-west by that portion called Anne's Farm, being a line north 51 degrees east 16 chains; and on the north-east by other part of the estate; and separated from it by a line north 39 degrees west 16 chains to the commencing point. And also all that piece or parcel of land called "Tylor's" Farm, lying and situate as above mentioned, containing by admeasurement 25 acres (more or less) commencing at the east corner of Currie's 25 acres; bounded on the south-west by Robinson's 25 acres; separated from

from it by a line south 39 degrees east 16 chains : on the north-east by Lamb's 25 acres and other part of the estate ; and separated from it by a line north 39 degrees west 16 chains ; and bounded on the north-west side by other part of the estate, and a line bearing north 51 degrees west 16 chains to the commencing point,—to the possession whereof the Bank of New South Wales claim to have been on and since the 1st day of November, in the year of Our Lord 1875, entitled, and to eject all other persons therefrom. These are to command you or such of you as deny the alleged title within eight days after the service hereof, to appear in person or by attorney in our Supreme Court, at Sydney, to defend the said property or such part thereof as you may be advised in default whereof judgment may be signed, and you turned out of possession.

Witness,—The Honorable Sir James Martin, Knight, the Chief Justice of our said Court at Sydney, the 2nd day of November, in the 39th year of Our Reign, A.D. 1875.

For the Prothonotary,—  
J. A. READ,  
2nd Clerk of the Supreme Court.

And John Boyle has, on the \_\_\_\_\_ day of \_\_\_\_\_ 1875, appeared by William Maguire, his attorney to the said writ, and defended for the whole of the land therein mentioned. And Kingston Cooke has also on the \_\_\_\_\_ day of \_\_\_\_\_ 1875, appeared in person to the said writ, and has defended for a part of the land in the said writ mentioned, that is to say, "All that piece or parcel of land called 'Tylor's' Farm, lying and situate as above mentioned, containing by admeasurement 25 acres more or less. Commencing at the east corner of Currie's 25 acres ; bounded on the south-west by Robinson's 25 acres, separated from it by a line south 39 degrees east 16 chains ; on the north-east by Lamb's 25 acres and other part of the estate, and separated from it by a line north 39 degrees west 16 chains ; and bounded on the north-west side by other part of the estate, and a line bearing south 51 degrees west 16 chains to the commencing point.

Therefore, let a jury come, &c.

Deputy-Sheriff Allpress came up with several men and two constables, but I sent down to Sydney a man on a fast horse, and the Sheriff sent word : "For God's sake do not interfere with Kingston Cook." They had found that the farm land occupied had been put under Torrens' Act by a man named Stewart, living at Enmore. Consequently, their action against me was null and void. I have been subjected to great persecution by those people, and I have lost £1,100 over it.

186. Has Broughton made application to put this grant under the Real Property Act? Yes ; and I have had to oppose him.

187. Has he succeeded? I do not know.

188. He made application? Yes ; and I put a caveat in against his application.

189. When was that? I think that that would be about 1888.

190. Did you meet with any opposition in the Lands Titles Office with regard to it? I did, and a person I believed to Mr. Ward, the then Registrar-General, called me outside and said : "I dare you to put a caveat in." He put his fists near my face and said : "I will keep the Lands Titles Office one hour later, and I dare you to put a caveat in, or you will be sold up." I then determined to let the matter drop. As a matter of fact the office was kept open long after the closing time, the person alluded to staying with me on the front steps.

191. Has anyone been in with Mr. Broughton on the matter? Yes ; I paid £18 to a man named Thos. Freehill, known as "Paddy" Freehill.

192. What are the names of the others who were in with Broughton? Mr. Broughton stopped me in the street and said : "I am very sorry for you ; you have lost a great deal of money over this matter." I said : "If you are sorry, show it by giving me a piece of this land," and he said there are twenty-two people in with him. I asked who they were, and he said : "I mean twenty-two grandchildren." They say that Judge Rogers is in it. I never had any more to do with Broughton. They offered to pay my passage if I would go to San Francisco. Mr. Broughton said in Court, when the case was going on, "I will drive you out of the country as I did William Palmer Moffatt and Thos. Henry Sindon." I said, "You cannot ; I am too respectable a man." He said : "Moffatt was driven out of here and lynched in America."

193. *Mr. Howarth.*] You say that you bought from John Boyle, Tylor's farm for £250? Yes.

194. When was that? I think about 1874.

195. Did you receive a title? No ; the deed or agreement was drawn by Ellis and Makinson, and I gave bills afterwards to Mr. Boyle for the amount. The bills were turned over to another person, and I afterwards had to give £100 to get them back again and to prevent myself from being sued.

196. Did you ultimately receive a title to that land? No ; they found another man named Stewart had got it under the Torrens' Act.

197. As a matter of fact you never did possess a title to Tylor's grant? No ; I took Mr. Boyle's title.

198. So you really never had a claim? Yes ; I lived on it and paid Mr. Boyle a small sum every month as a rent until the bills were paid. I gave bills for £250.

199. You never completed the transaction? No.

200. Do you know in what year Stewart obtained the Torrens' title? No.

201. Harnett promised to give you possession of Carr's grant? I never knew Harnett had any connection with Carr's grant. Harnett gave me possession of Gore's house on the hill. I lived there and paid rent, but when he found that Mr. French had visited me, and said he (Harnett) had no power to underlet. He said, "Harnett, give me back your lease, and I will make you a weekly tenant," and that was done. French said : "If you give me possession of Gore's house I will give you another piece of land a quarter or half an acre." I said to Harnett, "Where is your title?" and he said, "French was courting my daughter, and he stole the deeds out of my desk." I wish to add that I arrived in New South Wales at the end of 1871 "with capital." I commenced business by taking a contract from Mr. Moriarty, of the Harbours and Rivers Department. I was introduced to him by Mr. John Musson, the well-known hydraulic engineer. The contract occupied me until I became acquainted with these land dealers.

Frederick George Lewis called in, sworn, and examined :—

202. *Chairman.*] You are a clerk in the Lands Office? Yes.

203. Do you produce a map? Yes ; I produce a map marked "C. 582-690," showing the Gore and Artarmon estates. It is a survey made by Mr. Edward J. H. Knapp in 1849. [*Copy appended.—See* 17 Sept., 1896.

204. Does it show the position of the several grants of land in the parish of Willoughby, in the county of Cumberland? Yes.

Edward

Edward James Howes Knapp called in, sworn, and examined :—

E. J. H.  
Knapp.  
17 Sept., 1896.

205. *Chairman.*] What are you? Licensed surveyor under the Real Property Act.
206. You see the map produced here? Yes, it is a map which was made by my father.
207. Your father located certain grants there? Yes; he was told off by the Department to allocate all these grants in the parish of Hunter's Hill. He had been making a survey for the grant of Mrs. J. D. Nicholls, and the Surveyor-General deputed him to allocate these grants. He had been making surveys there in 1833 and in 1836 for the Gore family, and it was in consequence of his local knowledge that he was chosen for this particular work. After allocating all these grants he found there about 100 acres of Crown land which are tinted yellow on the map.
208. Do you know who is in possession of those lands now? I cannot say now. Some years ago an attempt was being made to jump the Crown lands marked on the map 275, and tinted yellow, and I told R. M. Pearson, the Chief Draftsman of the Lands Titles Office about it, and something was then done by him to block the issue of the certificates of title. A letter was received from the Lands Department, and Mr. Pearson wrote on the plan of the parish of Willoughby in the Lands Titles Office this note, "No application under the Real Property Act can be entertained for any portion of the following grants, viz., H. Evans, 25 acres; W. Wright, 25 acres; G. Tilley, 25 acres; and H. Lamb, 25 acres." This was the land they were trying to get through the Real Property Office. Mr. Pearson also wrote: "Vide letter from Minister for Lands, 5th May, 1885." Under that he has written the following memo.: "Another letter has been received from the Secretary for Lands, desiring that the terms of the letter from his Department, dated 5th May, 1885, to be adhered to. R. M. Pearson, 23/6/87." That was in reference to these grants, which I have just mentioned. Mr. Pearson told me when I returned from the country that a further attempt had been made to get a further certificate of title for some of this land, and that it had succeeded, and he mentioned the names of those who were interested.
209. Who were they? The late Sir Robert Wisdom, Sir George Long Innes, John Williams, Francis Edward Rogers, and Thomas Broughton.
210. *Mr. O'Sullivan.*] What was Broughton at that time? For many years he has been nothing but a land speculator. He was originally in business as a tailor in Sydney.
211. *Chairman.*] Who was John Williams? He was Crown Solicitor. On the 15th August, 1887, I addressed a letter to the late Sir Henry Parkes calling his attention to the fact that there was Crown land in his electorate, and suggesting that as they were spending so much money in purchasing parks they might take possession of that land, and they would have one of the finest spots on the harbour. I saw him on the subject, and he said if you will give me the particulars I will very likely do something in the matter. On the 28th November of the same year I wrote him a letter referring to my last. In this letter I said, "I have your note of the 6th September, with Mr. Garrett's memo. of the 5th of same month, in which he says, 'We are doing all that can be done to prevent these lands from being improperly alienated.'" I furnished Sir Henry Parkes with full particulars of the various grants, "William Wright's grant, 30 acres, dated 3rd September, 1794, laying (sic) and situate in Lane Cove, in the district of Hunter's Hill." Then on the Register of Grants, in the Surveyor-General's Office, under the head of remarks, "Exchanged by William Wright with Obadiah Ikin for William Baker's farm. Then sold on the 3rd August, 1797, to John Holdsworth for £3." "H. Lamb's grant, 25 acres, dated 19th November, 1794, laying and situate in Lane Cove, in the district of Hunter's Hill, cancelled." "Grant given on the Hawkesbury, Mr. William Moore, proprietor, 14th May, 1822.—Cumberland Register, No. 1, folio 37." "H. Lamb's grant, 25 acres, dated 19th November, 1794, laying and situate in Lane Cove, in the district of Hunter's Hill, cancelled." Cumberland Register No. 1, folio 38. "Robert King's grant, 30 acres, dated 3rd December, 1794, laying and situate in Lane Cove, district of Hunter's Hill, cancelled."—Cumberland Register, No. 1, folio 41. "Humphery J. Evans' grant, 25 acres, dated 3rd December, 1794, laying and situate in Lane Cove, in the district of Hunter's Hill, cancelled." This grant being found in the Secretary's office, with a note thereon, demised to the Crown, 15th August, 1804. (Signed) D. D. Mann, Clerk."—Cumberland Register, No. 1, folio 41. The above accompanied my letter to Sir Henry Parkes of the 28th November, 1887, but he never took any action in the matter. That is all the information that I can give.
212. Do these grants represent the land shown on the plan tinted yellow? No. In addition to that tinted yellow they represent Crown grants which were cancelled.
213. *Mr. O'Sullivan.*] You mentioned the name of Tilley—is it Tilloy or Tylor? In some places they have got it Tylor. I think it is one and the same grant. Tilley is the proper name.\*
214. You have no doubt whatever about the grants you have referred to being cancelled? None, whatever; I have given you the records.
215. Then if these are what they got under the Torrens' Act they have no substantial basis for the title? No; in regard to land tinted yellow.
216. Would a possessory title of twenty years give them the right to apply for a Torrens' title? Not against the Crown. It must be sixty unbroken years under the *Nullum Tempus* Act, twenty years against private individuals in the Colony, forty years if they are resident outside the Colony. You might get some data from the Lands Titles Office, and see exactly who has been applying for these lands under plans numbered 4,489 and 5,141, and deposit plans 1,206 and 1,658, also applications Nos. 7,019, 7,460, 7,469, and 7,470.
217. Is there anything further? The first transaction which my father had with the land, on account of William Gore, was in 1833. He made a survey for William Gore of the Artamon Estate. What became of the fair copy I do not know, but I have here the rough office copy showing the survey. In 1836 he made another survey.
218. *Chairman.*] What do you think are the rights of the Crown in regard to the land? My opinion is, that the whole of that 100 acres tinted yellow belongs to the Crown.

219.

NOTE (on revision):—This is a verbal slip. Tilley's grant is quite distinct. Taylor, or Tylor's, is a separate grant south-east of Tilley's.

219. That is the cancelled grants? No; that tinted yellow—that never was granted. It is the land marked on the plan referred to.

220. Do you know that the Crown claims a reserve of 140 acres near the railway station? I did not know that, unless it is that tinted green on plan.

221. *Mr. O'Sullivan.*] How much land, in your opinion, belongs to the Crown in that vicinity? About 100 acres, which has never been alienated by the Crown; where Mr. Whiting lives is part of it. The brick-works behind Whiting's place, and that claimed by Sir George Innes.

222. *Chairman.*] Then this cancelled grant of Tilley's you consider to be Crown land? Yes.

223. What would you consider to be Gore's title in regard to that land? My father was employed by Gore to do his private work. If that had been Gore's land he would have reported it to the Surveyor-General, but he did not; he said it was Crown land.

224. What do you consider to be Gore's title to the adjoining lands—we are told that there was a consolidated grant? That came before my father's survey of 15th October, 1833. It was in 1833. I have a description of the consolidated grant at the office.

225. What was the area? 1,000 acres. It was granted to Ann Gore and the children.

226. Does that grant contain the Artarmon Estate? Yes.

227. Do you know anything about the Cumberland Register which contained all the particulars in regard to this grant being stolen? There is a mistake about that. It is not the Cumberland Register at the Lands, but the book at the Real Property Office. It was mislaid, not stolen. It was the Cumberland Register from which I took the extracts of the Surveyor-General's Department.

228. Any extracts that could be taken from that book would be correct? We call it the surveyors' bible.

E. J. H.  
Knapp.  
17 Sept., 1896.

WEDNESDAY, 23 SEPTEMBER, 1896.

Present:—

MR. LAW,

MR. J. C. L. FITZPATRICK,

MR. HOWARTH.

E. M. CLARK, ESQ., IN THE CHAIR.

S. M. Quinlan, Esq., solicitor, appeared for Mr. J. H. O. Ffrench.

Thomas Broughton called in, sworn, and examined:—

229. *Chairman.*] You have some interest in connection with this Gore and Artarmon Estate? On the 15th June, 1855, I lent James Nainby Shuttleworth £2,000 by way of mortgage. The mortgage deed will describe the land on which I lent the money. Shortly after I lent the money, J. N. Shuttleworth became insolvent. Mr. Morris was appointed his official assignee. Mr. Morris transferred to me all his right, title, and interest in the land mortgaged to me by Shuttleworth.

T. Broughton.  
23 Sept., 1896.

230. How did Shuttleworth become possessed of this property? William Gore mortgaged his property on the 20th August, 1840, to William Pendry. There was a second mortgage on the 21st August, 1840. There were further charges on the 6th October, 1840. There was a third mortgage on the 31st December, 1840. There was a fourth mortgage on the 20th October, 1840. Then there were further charges on the 21st October, 1841. William Gore became insolvent in 1843, and he died in 1845. Pendry also became insolvent. On the 15th June, 1848, Clark Irving being the official assignee of William Pendry's estate, transferred to Rudolph John Want all Pendry's right, title, and interest under the mortgages. Rudolph John Want sold to James Nainby Shuttleworth. Then as I have previously stated, Shuttleworth first of all mortgaged to me; then he became insolvent, and his official assignee, John Morris, transferred to me the equity of redemption of James Nainby Shuttleworth. Of 940 acres known as the Artarmon Estate, I got 316 acres passed under the Real Property Act. I found that there were numerous claimants for portions of the land. I found that Mrs. Ffrench claimed a portion. I promised her that I would convey to her son what she claimed. I did convey to her son William Power Gore Ffrench 109 acres of land. That was more than she claimed, but her sister Francis Catherine Gore claimed Packer's grant, and I conveyed to Ffrench, I think, Robinson's grant, in lieu of Packer's, and part of Williamson's and Asser's, in consequence of the alteration of the Lane Cove Road.

231. This 316 acres was really all that you got out of the 940 acres? That is all that I got. I did assist Mr. Whiting to perfect his title to that 109 acres that I just spoke about, which I conveyed to Mrs. Ffrench's son.

232. Did you ever make application to the Department of Lands to issue a consolidated grant in regard to that land? Not exactly a consolidated grant, but I did apply to the department to grant to Mr. Ffrench certain land, and to grant the balance to me. Whilst upon that subject, allow me to state that in the Lands Department there is a very voluminous correspondence between the Gore family and the then Colonial Secretary.

233. Did you ever purchase any land at all from Green on this estate? I did not. But Sir Robert Wisdom purchased from Green 100 acres of land. Sir Robert found that he could not perfect the title, and he drew me into the purchase with him so as to complete his title. I did not see it at the time, but learnt that afterwards. That 100 acres Green could not convey. He had only half of Whitfield's farm. I allowed him 12½ acres to complete his 100 acres.

234. Do you know what farms that 100 acres represented? Yes. J. Berk's, C. Whitfield's, J. Sawyer's, and C. Tilly's; these are the four portions that Sir Robert Wisdom bought from Greene.

235. *Mr. Law.*] These were four portions of 25 acres each? Yes. Lenthal claimed 5 acres, and disputed the title to that 5 acres and succeeded.

236. *Chairman.*] Has he still got possession of that land? I believe some mortgage company have possession of it.

237. Does that land you speak of include Whiting's land? No.

238. What farms did Whiting's land represent? The farms that Whiting claims and occupies are the farms which I conveyed to John Ogilvie Power Ffrench.

239. What are the names of those? Gore's, Robinson's 25-acres, Perry's 25-acres, then there is a piece No. 275, that comprises the land which Mr. Whiting bought.

- T. Broughton. 240. You say that you conveyed the land to Mr. Ffrench;—I suppose there was a consideration for it? Not to me; I merely made a promise to his mother that if it lay in my power at any time to convey the land to her, I would do so. I had known the Gore family for a number of years.
- 23 Sept., 1896. 241. Then, your claim in connection with this land was clearly by reason of the purchase from Shuttleworth, not by reason of any arrangement with the Gore family at all? Certainly not by any arrangement with the Gore family, but in virtue of my purchase, and to avoid law expenses.
242. What farms did this 316 acres represent? First, Gore's grant of 150 acres—that was the Artarmon Estate. I was involved in a lawsuit with Sir Alexander Stuart. He commenced to fence, and my tenant, James Berayene, pulled down his fence as fast as he put it up. Sir Alexander commenced an action against Berayene. He lost that action, and then appealed to the Privy Council. The Privy Council thought that the case required more inquiry, and referred it back for further inquiry. My counsel at that time, Frederick Darley, advised me that it would cost more in law than the land was worth, and advised me to compromise with Sir Alexander Stuart and Mr. Shepherd Smith. I did compromise with them. I was to take one-half of Artarmon and one-half of Cann's 25 acres, and they were to take the other half, in equal shares of one-fourth.
243. That was out of the Artarmon Estate? That was the 150 acres and 25 acres which we called at that time Webber's grant, but now called Cann's.
244. Then you became possessed of one-half? I became possessed of one-half of the Artarmon Estate and half of Webber's, now called Cann's.
245. Have they done anything with it? No.
246. What have you done with your half? I have it still.
247. Did you do anything to perfect the title? Yes; I perfected the title to 316 acres, and the proving of that title cost me £12,000 in law.
248. You say you perfected the title to 316 acres;—I suppose that is land outside this farm altogether? No; it includes my half-share of Artarmon.
249. Then you perfected your title to the whole of 202 acres of the Artarmon Estate, and the other farm and the other title remains in dispute to the present time? Yes. I say that I have got a perfect title to 316 acres in all out of 940 acres. Sir A. Stuart and Smith got 106½ acres; Green sold 95 acres; Ffrench obtained 109 acres; Lenthall, 5 acres.
250. What title have you to the 150 acres in the Artarmon Estate? A grant. 150 acres was the original grant, but when they came to take the metes and bounds of that 150 acres it comprised 202 acres.
251. But if there was a consolidated grant of the whole estate that land would have been included in the consolidated grant? Certainly.
252. And it would not have mattered whether it was 150 or 200 acres? I might tell you what I know about this consolidated grant. I do not think that the papers which are in the Colonial Secretary's Office disclose that any grant was ever issued. In the year 1818, D'Arcy Wentworth held a mortgage over William Gore's property at the Lane Cove. D'Arcy Wentworth foreclosed and sold the property to a person by the name of Amos. William Gore obtained an order from Earl Bathurst, in Downing-street, London, to Governor Macquarie, to grant to William Gore a section of land. William Gore proposed to Wentworth to hand to him that grant in consideration of his cancelling the mortgage on the Artarmon property. Mr. Gore was in England upon the trial of Governor Bligh. This is what Mr. Gore told me himself. Gore proposed to D'Arcy Wentworth to hand to him that order for a section of land in satisfaction of his mortgage. Wentworth said that that section of land was not equivalent for the money which he had lent Gore, but he said, "If Governor Macquarie will grant me 1,500 acres of land I will hand over your property to you. I will take that in satisfaction of my mortgage." Governor Macquarie sanctioned the grant of 1,500 acres of land to D'Arcy Wentworth, in consideration of his relinquishing the mortgage upon Gore's property. In the year 1821, D'Arcy Wentworth was entitled to 500 acres on his own account, and a grant for 2,000 acres was issued to Wentworth, that including the 1,500 acres. Wentworth handed the deeds of that land to Captain Piper and to Mr. Garland, who was then Provost, Marshal. Mrs. Gore, in 1826, applied for a grant in her own right. A form was sent to her to fill up for that grant. I have seen that form myself among the papers in the Lands Department. It never was filled up, and no grant was ever issued, as far as I could ascertain, in favour of Mrs. Gore.
253. *Mr. Quinlan.*] You say that the grant of the 15th January, 1833, was a forgery then? I do not know anything about it.
254. But you say that no grant issued? I said that Mrs. Gore applied for a grant of land in her own favour, and I say that no grant was issued to Mrs. Gore upon that application.
255. Then what do you say of the grant of the 15th January, 1833? When I have finished giving evidence you will have an opportunity to ask questions, but you have no right to interrupt me. I refer the Chairman to the correspondence in the Lands Department for the statement I am making.
256. *Chairman.*] What date would that be? 1826. Mr. Gore, about the year 1826, was willing that this property should be made over to his wife and children.
257. That is the land comprised in the 940 acres? Yes. I always understood from old Mr. Gore and his family that they were entitled to 1,000 acres of land. Of that 1,000 acres of land the conveyance from Shuttleworth to me comprised 940 acres. Mr. Gore was willing, and made an application out for this land to be transferred to his wife and children, but no transfer, as far as I am aware, ever took place. I remember that Sir Thomas Mitchell objected to make any transfer unless he had written instructions from the Governor to do it, and up to that time he never had any such instructions. Whenever Mr. Gore got into debt he would then state the property was his wife and children's. When he wanted to borrow money it was his own property, and not the wife and children's. I knew the old man. He was a hot-headed Irish gentleman. An application was made, as I have already stated, in 1826, when Gore was quite willing, to avoid paying his debts, to have this transferred to his wife and children, but subsequently he left Gore Hill and went to live in Pitt-street. He was anxious to get money, and to get his daughters settled, and from time to time, I know of my own knowledge, that he obtained large sums of money from old Mr. Pendry and his son—in fact, he obtained so much that he brought Pendry into the Insolvency Court. I have heard of such a thing as a consolidated grant to the Gore family of 1,000 acres of land. The late Mr. R. B. Smith asked if I would come and see that consolidated grant, but I never did see it. When he asked me if I would look at it, I said, "No; I do not want to be mixed up in this thing." There is one thing that the Committee ought to know, and that is that in the early days of New South Wales there was

was no such thing as a Registrar-General's Office. There was no registration of deeds beyond the Cumberland Register of Grants. When D'Arcy Wentworth obtained Gore's 1,500 acres of land he did not go through the form of reconveying to Gore the land that was mortgaged to him, but merely returned to Gore the deeds that had been mortgaged, so that really in law and in equity the equity of redemption remained in Wentworth. Then, about 1842, George Greene obtained, or rather Parry Long obtained for George Greene, a reconveyance from William Lawson and William Charles Wentworth of the land which Gore had mortgaged to D'Arcy Wentworth. That was about the year 1842. In consequence of their obtaining that, George Greene, Mrs. French, Miss Gore, and William Bligh Gore, made a distribution amongst themselves of Gore's property. The plan of that distribution was given in evidence in the case of Stuart and Smith against Baraycne. If the Committee desire it I have no doubt they can get all the information on that subject from Mr. H. R. Way, my attorney. I believe that Mr. Clayton has the original documents of the agreement entered into by Mrs. French, her sister, Miss Frances C. Gore, William Bligh Gore, and George Greene, and the name of Lady Fitzgerald, one of the daughters of Gore, was also mentioned, but she did not sign that agreement. Her name was mentioned, and I think Mr. G. R. Whiting, with the view of perfecting his title, administered to the estate of both Mrs. Fitzgerald, Campbell, and Chapel with the view of perfecting their title, as they supposed, to the Artarmon Estate, paid Mr. Campbell, son of General Campbell, in England, £1,000 for any right, title, or interest which he might have in his mother's estate of Artarmon. In the appeal case we took the evidence of Campbell in England as to any right or title that he had to the land, and he declared that he had never been in New South Wales, and that he had no claim or title, as far as he knew, to any land in New South Wales; but some people residing in New South Wales had offered him £1,000 for any right that he might have. He conveyed that right to Campbell and Chapel in consideration of the £1,000. Amongst the land which I considered that Shuttleworth conveyed too was a farm called Bromby's Farm of 25 acres; another farm called Bruin's Farm of 25 acres, and another farm stipulated as Holdsworth's. I think I ought to tell you that in 1832 Mr. Gore collected together all the deeds that he possessed with regard to the Artarmon Estate. I heard Mr. Thomas Lane in the case that was tried in the Supreme Court swear that he packed up the whole of Gore's deeds in the year 1832; that he accompanied Mr. Gore to the Colonial Secretary's office and saw Gore hand over those deeds to the Colonial Secretary for the purpose of getting a consolidated grant of all. Mr. Lane was the confidential servant of Mr. Gore for over ten years. He lived with Mr. Gore up to 1842. Mr. Gore became insolvent in 1843, and he died in 1845. Then there was a scramble for his property. In the year 1843 Mr. Gore appeared before me at the Police Court in my magisterial capacity, complaining of George Greene having made a forcible entry into his house and barring the doors against him. I, with Mr. Chas. Windeyer, committed Greene to take his trial for forcible entry on to Gore's premises. He was tried and he was fined £25. Greene and Gore's eldest daughter, Mrs. French, were constantly wrangling as to who should get possession of the old man's property, and at last they forced him out of his house, and he went to live in a little cottage on the top of the hill, which has since been called Greene's. I have not said anything to you respecting John Boyle. In 1856 William Bligh Gore desired to see me at Lamb's farm, where he was then living. He proposed to sell me all his right, title, and interest in the Gore Estate for £100. I mentioned to him that old Boyle made a claim on the Artarmon estate, he said Boyle never gave him a shilling in his life, but he conveyed the Artarmon estate to John Boyle to prevent Want from selling it over his head. Want had a judgment against him, and he was afraid that Want would take the property, so he conveyed it to Boyle with the understanding, that if they got the property, he should have one-half and Boyle should have the other. I spoke to Boyle on the subject subsequently. I told him what W. G. Gore had said to me, and Boyle said, "well he did owe me something, I surveyed the land for him, and he promised me that I should have half." I swore that in the Supreme Court in the presence of John Boyle, and neither John Boyle nor his counsel contradicted it or questioned me upon the subject.

258. Did you ever have any dealings with Mr. Freehill in connection with his estate? Yes; I remember the whole of that matter. Mr. Freehill was living in Lower George-street, and was a baker. I heard that he had taken a conveyance from John Boyle for 120 or 130 acres of the Artarmon estate. I took the grant of the 150 acres down to Freehill, and showed it to him, and endeavoured to satisfy him that it was my property, and that if he was going to pay any money for it he would be throwing his money away. I was about to commence an action against Freehill, but his friends came and begged of me not to commence any proceedings against him, because he was in difficulties, and if I commenced any proceedings it would be the means of driving him through the Insolvency Court. I did not take any proceedings against Mr. Freehill, and the next I heard of it was that he had mortgaged the property to the Bank of New South Wales. Subsequently I heard that Mr. Shepherd Smith, or the Directors of the Bank of New South Wales, sold to their codirector, Sir Alexander Stuart, Mr. Freehill's interest in the Artarmon estate. I also heard that Sir Alexander Stuart had sold one-half to Mr. Shepherd Smith, then they commenced proceedings against my tenant Baraycne, and that was the cause of my compromising with them.

259. You say that Gore conveyed some land to Boyle;—what land was that? As far as I know, William Bligh Gore conveyed to John Boyle, without consideration, his interest in the 150 acres of land; and I may state that at the time of that conveyance he had mortgaged to George Green. George Green's mortgage is dated 9th March, 1846. I think, speaking from memory, that William Bligh Gore's conveyance to Boyle was in 1851; but in 1851 he had nothing to convey. I look upon it from first to last that old Mr. Boyle is a myth in the interests of the Gore estate altogether.

260. But has he not been in possession for many years? Although I hold the certificate of title, the man is too old for me to throw him out into the streets. I would not take any steps to dispossess him, but I may tell you that Sir Alexander Stuart did take steps against him. He unroofed the house that Boyle is living in, but I never would do that.

261. I suppose the man claims some right by reason of that conveyance from Gore? He has no more right than you have.

262. Then Green has no right? I will tell you how Green may claim some right. In 1843, when Gore became insolvent, George Green bought the assets in Gore's estate, and I have always thought that that gave Green some right to the property, which was not mortgaged to Pendry.

263. If Green said he had a right to 500 acres that would not be a fact? I did make good Green's title to 100 acres. I paid him £2,600, besides a deposit of £500 as my third share of that property, and he sold

T. Broughton. sold pretty well all that I had bought in Shuttleworth's Estate, and afterwards involved me in a lawsuit with a syndicate, which cost me thousands of pounds. He sold to Ferguson and Broad and a syndicate almost the whole of the land that was conveyed to me or mortgaged to me by Shuttleworth and the Official Assignee. Green has always claimed the land adjoining the cemetery near the railway—what is called Bromby's grant. Now, with regard to Bromby's grant, before I had anything to do with the Gore Estate at all, about the year 1842, Mrs. Ffrench claimed the cemetery and the land adjoining there. I have seen the correspondence between Mrs. Ffrench and the then Colonial Secretary on the subject of that land. The Government surveyed that land for the purpose of having it sold by auction. Mrs. Ffrench protested against the sale of the land, claiming it as part of her father's estate. I remember she stated that her father had held possession of that land, and at the time when she was writing a man named Michael McGowan was in possession of the land. I have no doubt that young Ffrench can produce some of the correspondence on that subject. I had two letters myself, and I handed those two letters to the late Mr. R. B. Smith. In consequence of Mrs. Ffrench's representations to the Government, they withheld the sale of that land. Green has always claimed that land. For the last twenty-five years he has had brick-works upon it, and he has been selling the clay. He has always claimed that land in opposition to me. I have never interfered with him. I thought that his father, having bought the assets in Gore's insolvent estate, that gave him some right to the land. In the deed of partition that I referred to, it shows that that portion was allotted to George Green. It was at one time fenced in, and I believe that some of the posts are still standing.

264. The original 1,000 acres was not fenced in, was it? I cannot swear that. I was too young at the time, and I cannot say that I ever went round the boundaries, but just on that spot it was fenced in, because in the year 1821 old Gore shot a soldier for going into his garden and cutting grass. He was tried, and sentenced to death for that, but he cut his throat in Court, and was carried out. He was sent to gaol, and afterwards made Sheriff.

265. In regard to this claim of Green's to his reserve near the railway-station, what right do you think he would have to that? The only right that I think he could have would be through his father buying the assets in old Gore's Estate in 1843, but how Green first came to have possession of that land, as I tell you, was his getting a conveyance of the equity of redemption from William Charles Wentworth and William Lawson of the mortgage of Gore to Darcy Wentworth, although when he handed to Gore his deeds, he did not reconvey the property, and the equity of redemption remained in Wentworth. I say still that there is part of the Gore Estate that the Crown have granted; the only difficulty is that in those grants they describe nothing. Those grants have never been dealt with yet, but they may be found in the Cumberland Register.

266. Somebody said that the Cumberland Register was stolen? I have seen the Cumberland Register over and over again. There are two copies—one in the Colonial Secretary's Office, and another in the Registrar-General's Office. I may tell you also that the Government filed caveats against me, and I had to prove my title as against the Government to several of those blocks of land.

267. *Mr. Law.*] You said that you had promised Mrs. Ffrench that you would give her son all the land that she claimed? I gave him all the land that she claimed, and all that her sister, Catherine Gore, claimed. I conveyed that to young Ffrench, and he conveyed whatever interest he had to me.

268. You said you gave more land than she claimed? I gave her son more than she claimed, because I gave him Robinson's grant, that she did not claim; and I gave him part of Williamson and Assor's grants, where the alteration of the Lane Cove Road was altered.

269. You gave her 169 acres? Yes; I gave her son.

270. You said that you made Green a present of 12½ acres to enable him to complete a sale? Yes; Green had a conveyance from Want, and his conveyance covered those three farms that I have mentioned, less 12½ acres of Whitfield's, and in order to enable Green to complete his contract with Sir Robert Wisdom I gave 12½ acres of land, and in return he conveyed most of my property to Ferguson and Broad.

271. You say that Green has been making bricks there for twenty-five years? I saw the brick kilns there as far back as 1873.

272. He had them there for twenty-five years? Yes; I have seen him working there. He has always claimed that land; and although it was conveyed to me, I thought that perhaps he had a better title than I had.

273. Has he been on that land for twenty-five years? I have not interfered with him at any time.

274. He has had undisputed possession for twenty-five years? Yes; his father must have claimed that land as far back as 1846. Mr. Clayton has what they call the partition deed, and that will show what Green claimed at that time.

275. About how many acres do you claim altogether? When you ask me how much I claim, I say that I have three portions of 25 acres each in that area; but I have not the deeds to show, and it cost me so much money that I am afraid that if the Government go against me it will cost me more than the land is worth. I have been to an expense of over £12,000, and I have had enough of it.

276. *Mr. Howarth.*] Did I understand you to say that William Bligh Gore became insolvent in 1846? No; William Gore, senior, was insolvent in 1843, and he died in 1843. My contention would be this, that when old Mr. Gore became insolvent, away went his interest; there could be no interest, in any heir-at-law, after that.

277. And the conveyance from William Bligh Gore to John Boyle is supposed to have taken place in 1851? Yes.

278. Do you remember the year of transference from John Boyle to Freehill? Yes, I think it was 1860. John Boyle's contention always has been that he got no consideration from Freehill. Freehill produced in the Supreme Court a cheque which he gave to Boyle for £500, but I do not believe that Boyle ever had £500 at any period of his life. W. B. Gore mortgaged to George Green on March 9th, 1846.

279. *Chairman.*] The whole of that estate? No, this 150 acres.

280. *Mr. Howarth.*] Then he is supposed to have conveyed to Boyle in 1851? Yes.

281. And Boyle is supposed to have conveyed to Freehill in 1860? Yes.

282. Did Freehill convey to Spiro Stampogen? No. Although it was mine I would not disturb Boyle. Spiro has a house on the land, I do not know that he has any title to it. When I applied under the Real Property Act I left that 5 acres out.

283. Then there were 2 acres some odd perches on the other side of the Mowbray Road? Yes.  
 284. Was it portion of the original Artarmon Estate? Yes.  
 285. That was supposed to be 150 acres more or less? Yes.  
 286. The 5 acres in the possession of Spiro Stampogen is not included in the certificate of title? No.  
 287. I believe it was conveyed by John Boyle to Spiro Stampogen? John Boyle has conveyed all his right, title, and interest to three or four different people.  
 288. You mentioned that Darcy Wentworth sold, or arranged to sell, the Gore Estate mortgaged to him to a man named Amos, did he sell to Amos? Legally the mortgagee cannot buy a property mortgaged to himself. He must get a third party to buy. I do not believe it was a *bona fide* sale.

T. Broughton.

23 Sept., 1896.

TUESDAY, 13 OCTOBER, 1896.

Present:—

MR. GORMLY, | MR. HOWARTH.  
 E. M. CLARK, Esq., IN THE CHAIR.

John Horatio Clayton, solicitor, called in, sworn and examined:—

289. *Chairman.*] Do you produce some papers in connection with the Gore and Artarmon Estates? I do. J. H. Clayton.  
 290. In connection with Mr. Green's claim? Yes. I do not hold these documents for Green. I hold them for Rogers and Broughton, in connection with the land which forms part of Green's land. 13 Oct., 1896.  
 291. Land that Rogers and Broughton purchased from Green? Yes.  
 292. Perhaps you would describe these documents? The first deed was a copy of a grant to James Brumby. That is a grant which purports to grant to James Brumby 25 acres of land, to be known as Brumby's farm, situated at Lane Cove, in the district of Hunter's Hill. I call attention to this, that across the documents is written the words "to be cancelled," but the words "to be" have been struck out, and the word "cancelled" left.  
 293. What is the date of that? The date of that grant is the 3rd December, 1794. I may mention that such a cancellation as that has been held by the Supreme Court in a similar case that I fought, known as Tilly's grant, has been held to go for nothing. The mere writing across a grant the word "cancelled" goes for nothing, because anyone might write that. It was held that the fee must be got in from the grantee—that the fee having once left the Crown, it must be got back in a proper legal way, not by writing across the grant the word "cancelled." The decision of the Full Court in regard to Tilly's grant shows that. We have got a Torrens title to-day for Tilly's grant. The next deed which I produce is an attested copy of a deed of partition. The date is blank, except that the year 1846 is given. That deed was made between William Bligh Gore or Artarmon and Charlotte Sarah Willoe French, Frances Catherine Gore, Elizabeth Margaret Fitzgerald, and George Green. That is the deed of partition which is supposed to divide certain lands which were part of the Gore Estate, at any rate, if not the whole, among Gore's children who are named there and George Green. The George Green mentioned is the father of Richard Green. There were four children of Gore's and this George Green who divided this land, Green taking under that deed the whole of the land coloured green upon the plan\* annexed to the deed.  
 294. Do you know what grants these represent? No; because in those days it appears that all the land in that locality was taken up by what were known as soldiers "chits" or permits, which enabled soldiers to take up areas of 25 acres generally; it did not say where. These areas were marked off in squares of 25 acres, the Crown being uncertain where any particular grantee had selected—until informed by him. A man was supposed to come back and say where he had taken up his 25 acres. Take Brumby's land. No surveyor could fix that, but it is there all the same. In this particular case it says that the land and hereditaments described in the plan or chart hereunto annexed marked with the letter "A" should become and belong to so-and-so. This refers to the partition deed.  
 295. Do you know the area of that land? No. I could not tell by the area. Any surveyor having that plan before him could go and mark it out from the natural features. The next document is a copy of a deed—George Green to John and William Stewart—that is a conveyance or deed of settlement. A deed of settlement from George Green to John William Stewart, dated 26th September, 1846, the same year as the deed of partition. By that deed George Green settled on these trustees—the two Stewarts—the very lands which are shown on the plan\* annexed to the same deed. He settled them upon certain trusts from his wife, giving her power of sale. Well, in that deed, to show the uncertainty of these lands, it describes the following pieces of land, viz., Artarmon, Polmont's, Asser's, Dick's, Loader's, Whitfield's, Roberts', Sawyer's, Robinson's, Packer's, Dargan's, Jennings', and Turner's Farm. Then it goes on to state, "or by whatsoever name or names the said land and hereditaments have been and now and are usually called, known, or distinguished," so that the names were uncertain at that time. But it says that one-sixth part is now in the actual possession of the late George Green, and is more particularly distinguished on the plan in the margin to these presents. That was in 1846. The great thing is to fix the land, the name being very uncertain at that time. There is one deed, dated the 6th October, 1876—Mariah Green and John Stewart appoint Richard Augustus Willoughby Green and Isaac Howard as trustees, in place of the two Stewarts. Then there is another deed, dated the 1st August, 1879, in which Mariah Green, Howard, and Richard Green appoint in place of Green and Howard, G. B. Robins and Thomas Cromack, new trustees in place of Howard and Green. Robins and Cromack, by deed dated 8th September, 1879, as trustees of Mrs. Green, sell to A. W. Green all the land comprised in that settlement of 1846. On the 9th September, 1878, Green executed a mortgage to his mother, and since that has sold some land comprised in this deed, and in those other deeds from which the purchasers from him obtained the Torrens' title. Rogers and Broughton have obtained the Torrens' title. Part of the land of course remains unsold, and the title is in Green to-day.

\* Tracings appended by the Committee. See Appendix D 1 and 2.

Henry

Henry Wheeler Gillam called in, sworn and examined :—

- H.W. Gillam. 296. *Chairman.*] You are in the Registrar-General's Department? Yes; I am Deputy Registrar-General.  
 13 Oct., 1896. 297. You have been summoned to produce a copy of the Cumberland Register? Yes; for 1833.  
 298. We asked you for particulars of a 1,000 acres of land granted by Governor Bourke, in terms of a promise made by Governor Macquarie, to Ann Gore, wife of William Gore, for the use of her children, in consideration of his surrender of numerous grants? No such grant was ever issued, as far as our records show. We have never had such a grant in our office.  
 299. I will read a declaration which has been made on that subject:—

We, the undersigned clerks to Robert Burdett Smith, of No. 169, King-street, Sydney, solicitor, do hereby certify that we have examined what purports to be a certified copy of the original grant under the hand of Sir Richard Bourke, Governor of the territory of New South Wales, and certified as being a true copy of the original grant by Alexander Macleay, Colonial Secretary, and that the writing on this and the preceding sheet of brief paper is a true and accurate transcription thereof.

18th April, 1894.

HENRY A. BOYD.  
 JOHN RIORDAN.

Have you any such grant in your office? No such grant exists there.

300. *Mr. Gormly.*] You have sufficient information to be able to say that there is no such grant? I have even better evidence than my own in the Judge's report on the Royal Commission appointed to inquire into the working of the Deeds and Search Branch of the Registrar-General's Department in 1894.  
 301. There is no record of this document in the Registrar-General's Office? No; if such a document really existed a certified copy was procurable from the office.  
 302. *Chairman.*] Then, in regard to the Cumberland Register, was it ever lost? No; in the early days, up to 1810, grants were made in the county of Cumberland alone. There were no grants outside the county, and they were all recorded in what was called the Cumberland Register. In the Lands Office, however, they had what were called Cumberland Registers, embracing the counties of Cumberland, Camden, Northumberland, Cook, and so on, and containing grants from 1832 to 1836, but there was no grant amongst them in connection with the Artarmon and Gore Estates, and no register whatever called No. 28. When the trials were on in connection with the alleged grant we had a most urgent scrutiny through all our documents to see if there could be such a grant, and we found it was impossible.  
 303. You say that no portion of the Cumberland Register has ever been lost? No.  
 304. Your whole register is complete? Yes; in every respect. The Judge says, in his report, "From the evidence of persons well qualified to speak on the matter, it appears that no such register as Cumberland Register No. 28 has ever been in the Registrar-General's Office." That is the statement of Judge Fitzhardinge, in his report, after rigid inquiry.

James Greer called in sworn and examined :—

- J. Greer. 305. *Chairman.*] What are you? A solicitor.  
 13 Oct., 1896. 306. We have called you here to give evidence in connection with the Gore and Artarmon Estates. We think you had better give it in your own way, as you have been connected with the estate? Yes; I have been connected with the estate for many years, commencing in 1852. I was acting at the beginning for William Hugh Gore, as solicitor, in some matters when I lived in Wentworth Court. At that time he wanted some money. I advanced £100 to him, for which I got a deed of conveyance of Turner's 25 acres, and 10 acres at Greenwich Point. It was conveyed to me by deed, and registered in the same year. It was all bush land at the time, and soon after I got the deed I went home with the great Devine case on appeal. That was about the year 1855. After that I returned to the Colony, and I did not bother about this ground at the time, as I looked upon it as bush land, until I heard that the Cooks were occupying it. I then brought an action of ejectment against them. They claimed by occupation. The matter was decided, however, upon a technical point without the merits of the case being gone into. I went into the matter very fully, and I got the late Mr. Brownrigg, one of the oldest surveyors here, to go into the matter. He made a search in the Colonial Secretary's office, and this is what he wrote:—

My Dear Sir.

Wentworth Court, 13 October, 1888.

I have looked up the matter of Gore's 10 acres and Turner's 25 acres, parish of Willoughby. I find recorded Book N, folio 777, under date 20th September, 1838, a mortgage of equity of redemption William Gore to Pendray of the following parcels, parish of Willoughby, viz:—

25 acres, known as Robinson's grant.	30 acres, known as Jennings grant.
25 " " Sawyer's "	25 " " Turner's "
25 " " Loder's "	25 " " Dargan's "
25 " " Curry's "	30 " " Asser's "
25 " " Deik's "	44 " " Polmott's or Williamson.
25 " " Whitfield's "	150 " described as Gore's Artarmon Estate.
25 " " Robert's "	10 " described as Gore's 10 acres, Gore's Bay.

In book P, folio 361, dated 27th April, 1839, I find a mortgage to Pendray of all the above parcels.

In book I, folio 174, I find the following record, bearing date 13th May, 1862:—William Bligh Gore to George Green, conveyance of an equitable right on equal half part of one-fifth of the Artarmon Estate; also Polmott's, Asser's, Derk's, Loder's, Whitfield's, Roberts, Sawyer's, Robinson's, Packer's, Curry's, Dargan's, Jennings', and Turner's grants.

You will observe that Gore had dealings with all these grants as far back as 1838. Many of the said grants being dated as far back as the year 1794. I did not search to ascertain when and how Gore came to be so possessed of them, but it is quite certain from the document I gave you that in 1862 his right to such grant was then under the consideration of the Government. I have not yet made search as to Pendray's dealings with Gore's conveyances.

As regards Gore's 10 acres, I made search in the records of the Surveyor-General's office, and find that the Crown grant bears date 29th September, 1833, and yet you will observe that under date the 30th September, 1838, he is disposing of it to Pendray.

You will also see how Pendray's 25 acres have been disposed of prior to your conveyance in 1863.

You cannot fail to see the difficulties surrounding this case or the trouble I have had in regard to it. Let me know your further wishes.

James Greer, Esq.

Yours truly,

MEADOWS BROWNRIGG.

307. *Mr. Gormly.*] Was Mr. Brownrigg a Government surveyor or a licensed surveyor? A licensed surveyor.

308. That document relates to what he knew personally? He made this search to help me in the case against

against the Cooks. I have here certified copies of all the transactions which took place between Morris, the official assignee, and Broughton, between Shuttleworth and Broughton, and Gore and Pendray, Irving, the assignee to Pendray, to R. J. Want; William Gore in 1841 to Pendray; Gore to George Green in 1846; Green to R. J. Want in 1851; William Gore to Pendray in 1841; William Gore to Pendray in 1840; George Armitage to Fairbairn in 1880; Power of attorney. I have here a copy of Turner's grant, dated 1794.

J. Greer.  
13 Oct., 1896

309. *Chairman.*] That is the land you have purchased? Yes. I purchased it right out for £100 with 10 acres at Greenwich Point. This is the history of the whole of the transactions. Full copies of all the deeds registered; I will lend them to you.

310. What became of this 25 acres of land—did you dispose of it? No; I never disposed of it. Broughton took proceedings about it. He said he had a prior claim by occupation, and I did not fight it a second time. The complication came in the matter when Shuttleworth appeared on the scene. I knew Shuttleworth; he was an erratic sort of fellow. He was in difficulties, and I think he went through the insolvency court. He was mixed up with Broughton and John Hoskings in some monetary matters. I find in some very old papers I have here an appeal which was given on the subject by the late Mr. Wise. The case was stated on which that gentleman's opinion was asked; it was as follows:—

*Ex parte* the Official Assignee of the estate of J. N. Shuttleworth.

A MEETING of the creditors in Shuttleworth's estate is to be held at the office of the Official Assignee to-morrow, Wednesday, 9th June, for the purpose of laying before them the result of the examination of Messrs. Broughton and Hoskings, relative to the mortgage of the Artarmon Estate, &c., and that the Official Assignee may obtain their directions as to the course he is to pursue to test the validity of the various deeds connected with the sale of Mr. Shuttleworth's knowledge in the flaw in S. Terry's will.

The evidence of Hoskings and Broughton, and previous opinions, are enclosed.

Will counsel advise as plainly as possible for the purpose of reading to the meeting what course the creditors by the Assignee should adopt to test the validity of the various deeds, and to place themselves in the best position, in order to obtain the dividend from the estate.

#### COUNSEL'S OPINION.

THE object of the examination of Hoskings and Broughton was to discover how far the mortgage could be proved to have been a carrying out of the illegal agreement, in other words, whether it was tainted with the illegality, and therefore void. A careful consideration of the evidence as given, coupled with the recollection of the mode in which the parties gave their evidence, brings me to the conclusion that there is not sufficient evidence to establish that the actual consideration of the mortgage was an advance on the part of Broughton for carrying out the illegal agreement, and that, therefore, Broughton cannot be fixed with conscious participation in the illegal transaction at the time of the mortgage. The examination was *in vivo*, and Broughton's manner was certainly favourable to his version, namely that it was an advance to meet Shuttleworth's general wants, and it is not to be forgotten that both the Court and the jury would lean rather towards supporting than invalidating the transaction. These observations apply to the original mortgage, but if the Assignees are prepared to redeem, I think that they would not be bound to pay any part of that sum subsequently advanced for carrying on the suit, after the knowledge of, and, therefore, in connection with the illegal agreement, i.e., there could be no second charge for that purpose.

9th June, 1858.

EDWARD WISE.

311. What do you consider Broughton's claim to the land? He alleged that he had persons in occupation as far back as 1830. He alleged that he had a possessory title. Then there was some transactions between him and Pendray, Shuttleworth, and Hoskings.

312. He purchased Pendray's or Shuttleworth's right, title, and interests in the estate? Yes.

313. Shuttleworth held a mortgage over it from Gore? Yes; and then Want bought the assets of Gore; then Shuttleworth bought them from Want. He made some arrangement with Want that Boyle and Gore, who were on the land, had to be ejected, and an action had to be brought to eject them. Shuttleworth was acting for Gore, and, of course, it was necessary for him as solicitor to intimate to his client that there was an action to eject him and Boyle. He alleged that there was never any notice given, and he allowed Want to go on with the case and eject them although he had sold. He was acting as purchaser and solicitor, being the purchaser himself and solicitor for Gore. It came before the late Chief Justice Stephen, and just after the sheriff's officer had been sent over to take possession; it was only then that Gore got the first information of the proceedings, and he went and had an interview with the Judge, and Shuttleworth was called upon to show why these proceedings had been carried on without his client's knowledge. The Sheriff was ordered out of possession, and Shuttleworth was going to be struck off the roll of attorneys.

314. *Mr. Howarth.*] Are you positive that Want purchased the asset from William Gore? Yes. I have a deed here, Want to Shuttleworth, dated 1852. He must have purchased to be able to sell to Shuttleworth.

315. If it is stated that Green purchased the assets of William Gore, that, in your opinion, is untrue? Not Gore; Pendray went insolvent. The consideration for that, he said, was a £1,000, but, in my opinion, Shuttleworth had not £1,000; he was hard up. I knew him well. I have a document here entitled Irving and Pendray to Want.

316. Do you not know anything of the Cumberland register? No.

317. Do you know of any transaction between Bligh, Gore, and Boyle? Yes. I recollect their being in my office very often. I recollect them consulting with me about matters. I know that Boyle was living on the Artarmon estate. I saw him there.

318. *Chairman.*] The 25 acres of Turner's grant and the 10 acres at Greenwich Point are in possession of Broughton? Yes.

WEDNESDAY, 21 OCTOBER, 1896.

Present:—

MR. HOWARTH, | MR. WATSON,  
MR. J. C. L. FITZPATRICK.

E. M. CLARK, ESQ., IN THE CHAIR.

Robert Henry Gordon called in, sworn, and examined:—

319. *Chairman.*] You are Mayor of the borough of Willoughby? I am.

320. Are you acquainted with the reserve in the neighbourhood of the St. Leonards' railway station which forms part of the Gore and Artarmon Estate? I know a reserve of 140 acres which, I believe, formed part of that estate.

R. H. Gordon.  
21 Oct. 1896.

321. That reserve was dedicated, I think, by grant to the borough of Willoughby? Yes.

322.¶

- R. H. Gordon. 322. What was the date of the grant? I have the grant here, the date is the 10th January, 1888.
- 21 Oct., 1896. 323. That was a grant of this particular area from the Crown? It is a land grant from the Crown of that particular area of land, 140 acres.
324. Does that grant show any particular original grants to individuals, or is the land described as Crown lands? It is Crown land.
325. They do not mention any particular grants to individuals? No.
326. Your Council still consider that that land is vested in the Council? We do. We consider that it is our reserve. The Government have taken action to resume it and cut it up for sale. But the Council still maintain that the reserve belongs to the people of Willoughby for recreation purposes.
327. Some steps have been taken by the Government lately in regard to it? We are in treaty with the Minister for Lands to try and arrive at a settlement. The Minister has taken action against a man named Green for removing soil from the reserve.
328. Land was vested by grant in your Council? Yes; and the Government have asked us to return the grant, so that it may be cancelled, and the Council have declined to do so.
329. You have no objection to leave that document, have you? I must refuse to leave it, but I will send you a copy of it.
330. *Mr. Fitzpatrick.*] You said there were some steps taken against a man named Green for trespassing or removing soil? Yes.
331. What was the result? A perpetual injunction was granted against him for trespass.
332. Was the question of title raised by him or by any one on his behalf? I do not think he defended it at all. It was reported in the *Sydney Morning Herald* that he did not appear. I was present when the Minister with a party drove on to the ground, while Green was in a hole throwing out clay, and a man with a dray was there to take it away. The Minister warned him of the risk that he was running, and told him that he would have to take action to stop it, the result being this perpetual injunction against his interfering with the land.
333. Has the Council ever taken steps to prove their right as against the Government? Not against the Government. All that the Government has ever done has been done against the strongest protests from the Council, but we are not in a position to fight the Government. We have no money to throw away on that.
334. *Chairman.*] Your Council rely upon the deed of grant? Yes; and we maintain that we have fulfilled our trust in so far as we were able.
335. *Mr. Fitzpatrick.*] Assuming that the Government took possession, and cut up the land to sell it, what course does the Council propose to adopt then? We have made certain proposals to the Government. We want them to give us reserves in other parts of the borough in return for this area, and if that is acceded to, it is possible that the Council will not interfere in the matter. In the event of the Minister for Lands failing to do that, we would fight it out if we have any grounds to go on.
336. *Chairman.*] This reserve is within your municipality? Yes.
337. And the area is 140 acres? Yes; and it is a very valuable site.
338. *Mr. Howarth.*] Do you know whether the reserve referred to was ever a portion of the Gore and Artarmon Estate? No; as a matter of fact, I do not.
339. You do not know the metes and bounds of the Gore and Artarmon Estate? No; I do not.
340. Do you believe that the reserve referred to can really form a portion of the Gore and Artarmon Estate? I do not know.
341. Even assuming that it may have been a part of the Gore and Artarmon Estate originally do you hold the opinion that it is still a portion of the estate? It cannot be a portion of the Gore and Artarmon Estate—it is reserved for the borough of Willoughby. Mr. Pigott, solicitor for the Council, has defended our title in the Supreme Court, as against Campbell and Nicholls in the Supreme Court action, and he could give all particulars.
342. That was in regard to the 140 acres? Yes.
343. You have had to fight for the title to this land? We have had to fight for it, and it went so far as to go to a trial. Then when the trial came on for hearing, it went by default—the parties did not appear.
344. You defended your title on that deed? Yes.
345. You maintained that your Council is entitled to the control of that 140 acres described in that deed? Yes.
346. *Mr. Fitzpatrick.*] Is there anything in the deed to show that the 140 acres ever formed part of the estate named? No.
347. *Mr. Howarth.*] Do you know that Green has been served with notice to hand over possession to one of the Crown Law officers of a portion of that reserve which he claims to have a title to? I have heard a rumour to that effect, but I do not know whether it is a fact.
348. *Chairman.*] Your Council having that deed in their possession, objects to any interference with their rights as trustees of that particular reserve? Most decidedly.
349. Unless they give you an equivalent? Yes. We shall probably ask them to let us have the whole of this land—this 140 acres? They claim to have cancelled the deed which I have exhibited here.
350. Have you any idea how they cancelled it? They say that we have neglected our trust inasmuch as we did not improve the land, and they have revoked the dedication by *Gazette* notice.
351. *Chairman.*] Did they allow you anything for the improvement of the land? Not a shilling.
352. *Mr. Fitzpatrick.*] That opens up the question whether the grant did contain a clause imposing certain conditions, the fulfilment of which is necessary before you can continue to hold the land;—is there such a clause in the grant? No; the only clause is one which says that the land shall be devoted for the purposes of a recreation reserve of the people of Willoughby, and for no other purpose. The argument of the Crown is that we have not improved, cleared, fenced, and stumped, the land, and made it fit for a recreation reserve. We have done this as far as possible. We have stumped, cleared, and fenced about 34 acres of it, and we had one portion of it laid out as a cricket ground. That was as far as our means would allow us to go.
353. Has the municipality any power to spend money for the improvement of reserves of this kind? It is very questionable. Legally speaking, I do not think we have authority to spend money on reserves.
354. You really rely upon assistance from the Government for that purpose? We do. All the money we have received from the Crown has been spent on those reserves. We have also spent £400 of the rate-payers' money in defending our title to the land.

355. You, therefore, still consider that under all the circumstances, in the interests of the ratepayers of Willoughby, you are entitled to claim this 140 acres? We do.
356. And you have objected, so far, to any interference from the Government? All along we have objected. We have parleyed with them, and we have submitted certain proposals which, if accepted, will, I think, settle the matter.
357. Has your municipality taken steps to prevent people with tents from occupying the land? They have all been removed, and several have been fined.
358. You have asserted the rights of the public to the reserve? We were doing so until the Government disputed our title. At the present time there is a serious menace to health around St. Leonards, owing to these humpies which have been put up on the land. There is no provision of sanitary conveniences whatever, and we cannot act now, as the Government say we have no power. If we went into court I suppose we would be defeated on that ground.
359. And you depend on the deed? We depend altogether on the deed of grant.
360. *Mr. Howarth.*] Does the deed contain the words, "and for no other purposes"? The grant from the Crown says, "We are desirous of granting the said land unto the borough of North Willoughby to be held and used as a place for public recreation, for the said inhabitants, and for no other use or purpose whatsoever."
361. Do you think that the Crown revoked the dedication because of the settlement on that land of certain persons on that land in humpies, tents, and so on? I cannot say exactly that may be part of it. They give a number of other reasons. They say that we neglected our trust in that respect.
362. Is this grant the original title that the borough held for that reserve? No.
363. The other title was valid, was it not? It was given on a wrong form.
364. Did you have to defend the other title, and to pay for the cost of the defence out of the rates of the borough? We did.
365. To what amount? About £400.
366. *Chairman.*] What title was that? This is not the first title. The first grant that we got was put on a wrong form, through an error in the Lands Department, and we were advised by our solicitor that we could not succeed in maintaining our rights on that form, and we were put to a lot of expense over it. When the Crown gave us this title they said, there is a title which nobody can touch.
367. *Mr. Howarth.*] Before obtaining the present title, did you ever have a case in court against any of those who had settled on the land a case, that went against the Council as to the validity of the title? It may have been so; I cannot tell exactly.
368. Since you have held this grant the Council has done its utmost to keep the land for recreation purposes? Yes.
369. You have sued people who have settled upon it;—you have obtained injunctions against certain people, and you have served notices? We have got convictions in the court, and had them fined. We fenced the ground on two occasions, but the fences have been cut down and taken away.
370. *Chairman.*] You consider this 140 acres of land to be a valuable asset of your Council? Certainly, 17 acres of it is worth £500 an acre.
371. You have done all that as trustees you could do in regard to the matter? We have done all that we could do. We have not much money at our disposal.
372. And this reserve has really been looked upon as a sort of wilderness, population having only latterly settled in its vicinity? Since the railway came.
373. The value of the reserve is only now being recognised? I understand that when it was dedicated to the Council in the first instance the value of the land was only £2 an acre. At present its value is about £200 an acre.
374. *Mr. Howarth.*] Did the Council at any time make application to the Crown to refund to them the cost of the litigation to which they had been put to to prove their title? Application was made both by deputation to Sir Henry Parkes and Mr. Carruthers, and they asked us to furnish details, and promised to look into the matter.
375. Did Sir Henry Parkes at any time promise to refund to the Council the amount of their costs? I have been told that he did.
376. You consider that as you were defending a valid title, issued by the Crown, the Crown should have paid the legal expenses incurred? We most decidedly look to them for that money—it is close on £400. They have not paid anything towards it.

John Doyle called in, sworn, and examined:—

377. *Chairman.*] You are an old resident of the district of Willoughby? I am.
378. How long have you been there? Going on for sixty-six years. I was born in Sydney. Left Sydney when I was 6 months old, and I have been there ever since.
379. You know this Gore and Artarmon Estate? I do. I was reared on that estate, and my sisters and brothers were born there.
380. Of course you knew Mr. Gore? Yes; I knew old Mr. Gore and his son.
381. Mr. Gore always asserted his rights to a certain area of land there? Yes; about 1,000 acres.
382. And that included the Artarmon Estate? Yes.
383. Have you any idea why he asserted that right;—did he claim that he got it by grant or how? They were grants to his family from the Government, I believe.
384. Do you know anything about the very old grants? Mr. Gore claimed all of them. They were McCanns', Roberts', P. Dargan's, Webbers', Humphries', Dan Carr's, Sawyer's, Kelly's, Packer's, Baker's, Lamb's, Brumby's, and others.
385. To whom was the Artarmon Estate granted? That was a grant to Gore.
386. You have lived on that estate? Yes; I lived near where Spiro, the foreigner, lives.
387. What was Mr. Gore? He was sheriff here at one time.
388. He shot a man, didn't he? He shot a soldier for cutting grass on his land—that 10 acres at Greenwich.
389. Down at Greenwich Point? Yes.
390. Where do you live now? I live on Berry's Estate, about a chain from the boundary of Gore's Estate.
391. Did you ever have any transactions with anybody connected with this estate? Yes. I paid William Bligh

J. Doyle  
21 Oct., 1896

- J. Doyle.  
21 Oct., 1896.
- Bligh Gore for the right to cut wood on it, and when he died his nephew, John Ffrench, the man who shot himself, received the money. He said he was Broughton's agent.
392. You did not know Ffrench in connection with this except as Broughton's agent? No.
393. You knew that he was in some way related to Gore? Yes.
394. Ffrench being a relative of Gore he had some right in connection with the estate? Well, his mother had the estate.
395. Who was his mother? Old Mrs. Gore's daughter who married Captain Lamb.
396. Who asserted the prior right to this estate? Gore always did. I never saw anyone molested on the land at the time when Gore had it.
397. Mr. Gore was always recognised by everybody as the man who had the greatest right to the property.
398. Did you ever understand that Gore had purchased the right to this land from old soldiers who had obtained grants? Yes; he got it from old soldiers. A man named Lane gave evidence in the Supreme Court to the effect that he saw old Mr. Gore give £5 for Dan Carr's grant.
399. Have you any idea of the relationship between Broughton and Ffrench in regard to this estate? I had dealings with Ffrench. I rented four or five farms from him, and he was always very anxious for his money. One time I said, "Can you not give me a little more time," and he said "I cannot. The man to whom I have to give the money is very eager for it." He said it was Mr. Broughton the squatter. I borrowed money from Mr. Whitton, the late Engineer-in-Chief for Railways, to pay him.
400. You have never had any dealings with Broughton at all?—
401. You have heard of Ffrench shooting himself? Yes; I know all about it.
402. You never heard that Ffrench's trouble was in any way due to Broughton? No.
403. You never had any transaction with Broughton in regard to this land? No.
404. How long is it since Broughton first asserted a right to this land from your knowledge? Thirty or thirty-five years.
405. You never knew upon what grounds he asserted that right? No.
406. The people for thirty or thirty-five years have recognised that he has some right? Yes; but I do not know why.
407. Do you know anything about Green's claim? Yes; Green's claim is Brumby's farm, 25 acres.
408. Why does he claim that? He used to have sawyers working on it, and was making bricks there.
409. Do you know anything about land surrounding St. Leonards railway station? An area there was given to the Council. They fenced it in, and Green cut the fence down and took it away.
410. Green asserted his right? Yes; he took the fence away two or three times.
411. You knew that land many years ago? Yes.
412. You do not know who fenced it in? I do not. The fence was burnt down at the time of the great fire in 1844 or 1845. Adjoining Berry's land some of the old posts are still in the ground.
413. The general impression was that Gore fenced in to assert his right to the land? Yes.
414. And that included the land where St. Leonards station is now and the 140 acres which the Crown claim? Yes; that was a portion of it.
415. *Mr. Howarth.*] At the time when you recognised Broughton through Ffrench as having some connection with the land, was Spiro settled on it? I have never rented land from Broughton. I rented it from Ffrench, who said he was agent for Broughton.
416. At the time you were paying rent to Ffrench for Broughton, was Spiro settled on the Artarmon Estate? He had 4 or 5 acres.
417. Was Spiro on the estate before you paid any rent to Ffrench? I paid rent to William Bligh Gore years before, and afterwards to Ffrench.
418. Did you ever lease any land from Broughton? No.
419. Were you ever ranger for Broughton? No.
420. You never acted as his agent? No; he told me once to look after his land.
421. Do you know when Spiro settled on that land? I do; I think it was Freehill who put him there.
422. Did Freehill put him in possession? He bought from Freehill.
423. Do you know how Freehill became possessed of that land? No.
424. Do you know whether Boyle sold to Freehill? There have been some transactions between him and Boyle.
425. Do you know whether W. B. Gore sold to Boyle? I know that Gore would be capable of doing a good many things.
426. *Chairman.*] Gore was not a man of immense wealth? No.
427. He always wanted money? Yes; and he would do anything to get it.
428. *Mr. Howarth.*] Has Spiro been there thirty years? Nearly, but not quite thirty years.
429. Did you pay rent to Ffrench for Broughton before Spiro came? I did subsequently to Spiro's settling upon the land.
430. *Chairman.*] What was your general impression with regard to Boyle's claim to the estate? He was always with the Gores—they lived together.
431. Did you ever hear that Boyle had some interest in it through the Gores? I cannot say.
432. How long have you known Boyle? About forty years; he was a surveyor, and surveyed all round the country for William Charles Wentworth.
433. And you never knew much about his connection with the Gores? No; he was very thick with the Gores.
434. Do you know anything about Gore living with Green? Yes; he lived with Green when Green lived down at Greenwich. There was a private school there, and I went to that school. It was kept by a barrister named Savage. Mr. Gore used to live there, and he kept a racehorse.
435. As far as Gore and Boyle are concerned, you do not know their relationship? Old Boyle had a sheep station. He once had seventy sheep, but they died.
436. *Mr. Howarth.*] Do you know whether Spiro has any title to that land? Spiro went to Mr. G. P. Slade, the solicitor, to sell his grant out. Slade looked at the deed, and said it was not worth the paper it was written on.
437. Spiro has been in possession of the Artarmon Estate for thirty years? He has been living on his own place.
438. How long has Boyle been on the estate? About forty years.

Richard Augustus Willoughby Green recalled, and further examined:—

439. *Chairman.*] I understand that you desire to make a statement in regard to the evidence that has been given? Mr. Quinlan stated that William Bligh Gore was a lodger of my father's many years ago, and he put it that Gore ran up a long bill, and he says that there was no mortgage executed by William Bligh Gore to George Green in 1846. I wish to contradict that. I never left my father's place until I was 22 years of age, and I know that Gore never boarded there. There was a mortgage, dated 9th March, 1846, and George Green foreclosed in 1848. Then I believe R. J. Want purchased the equity of redemption from George Green. It went from Want to Shuttleworth, and from Shuttleworth to Broughton in 1855. Then Shuttleworth conveyed to Broughton some 940 acres, but that was behind the back of a deed of partition signed by Gore. A deed, dated 1846, by the Gore family to George Greene.
440. Shuttleworth, then, is supposed to have conveyed to Broughton the whole of the land comprised in the Gore and Artarmon Estates? Yes; Greene's portion as well as the others.
441. But Broughton has since paid you certain sums in regard to a certain portion of that land? Yes; because I produced this deed, which rather astonished him, and he gave way.
442. In what way did he defeat you? He defeated me in one action, for one grant—Baker's Grant, 25 acres.
443. Then he has always been a cause of litigation in regard to this estate? There has always been some trouble about it.
444. When Broughton found himself beaten, he compromised with you in regard to a certain farm? Yes.
445. He has paid you money in regard to some land? Yes. He paid his share; there were four of them in it—Broughton, Wisdom, Rogers, Q.C., and the late John Williams, Crown Solicitor. They gave me £8,000.
446. Did they pay you that money? Unfortunately, I never saw a shilling of it. I was robbed of it.
447. You say that Broughton and others paid you £8,000? Yes; to my solicitor, and I never saw a shilling of the money.
448. Your solicitor was Ferguson, of Ferguson and Broad? Yes.
449. The parties fought you till they found they could fight you no longer, then submitted and paid you the money? Yes; they did.
450. Did you mention the name of Judge Innes? I sold 6 acres of land to Judge Innes and Sir Robert Wisdom—they gave me £800 for it.
451. Then this matter is really mixed up with two Judges at present sitting on the Bench—Sir George Innes and Mr. Rodgers? Yes.
452. You are sure that that money was paid over to Ferguson and Broad? Yes; I saw the butts of the cheques in the Supreme Court, and they could hardly credit the statement that I had never received the money.
453. These people acknowledge your right to the land? Yes.
454. What area did your father's mortgage comprise? It was the equity of redemption from D'Arcy Wentworth.
455. Your father purchased D'Arcy Wentworth's equity of redemption; what was the area of the land? 1,000 acres.
456. You have always asserted your claim to that area, including the Artarmon Estate? Yes; my father asserted his right in 1845. He surveyed the whole estate when I was a boy, and I have lived on the estate for fifty-two years.
457. And you still live on a portion of it? I still live on Dura's grant—a portion of the 100 acres sold to Wisdom & Co. That has to be sold by public auction, and we divide the proceeds.
458. What is the area? 100 acres—four farms. Deik's, Whitfield's, Sawyer's and Tilly's. When we were obtaining a certificate of title the Government opposed me.
459. You are waiting for a certificate of title to these four farms? No; that was issued six or eight years ago.
460. You still have a fifth interest in the 100 acres? Yes.
461. Have you taken any steps to sell? No; I cannot move; I am in the Bankruptcy Court; I cannot get a release. The land has come down to such a low value, so that they let it lie.
462. Broughton, Rogers, and Innes have always recognised your claim? Yes.
463. And always considered your claim sufficient to pay you a fair return for your land? Yes.
464. Is there anything else you would care to say? One or two little matters. Mr. Harnett claims a portion of Nicholl's land. I fought Mr. Harnett in the Supreme Court and beat him twice, but since I have got into the Bankruptcy Court he has gone and got a certificate of title.
465. Did he serve you with the necessary notice of his intention to apply? No. I have told him since about it. He is now cutting up the land to sell it. I have told him I shall call upon him to surrender his title.
466. Under the Real Property Act, he ought to have served you with a notice? Of course.
467. You were taken by surprise;—you found that he had got a title without your being informed of the fact? Yes.
468. *Mr. Howarth.*] That land that Harnett obtained a Torrens title for;—is it included in your asset? Yes. I think I showed some £50,000.
469. Did the Official Assignee offer to sell you a right, title and interest in the 100 acres some years ago? Yes.
470. Was it sold? It was not; but Mr. Rogers made an offer for it.
471. *Chairman.*] Mr. Rogers made an offer at auction for your right, title, and interest? Yes.
472. Where? In Hunter-street.
473. And there was no offer for it? Mr. Rogers offered £250.
474. Did they not accept it? No. They would accept nothing less than would release my estate.
475. What amount was necessary for that? £1,500.
476. Judge Rogers attended the sale and made an offer? Yes.
477. You were present? Yes.
478. You heard him make an offer of £250? Yes.

R. A. W.  
Green.  
21 Oct., 1896.

John Boyle recalled, and further examined:—

J. Boyle.  
21 Oct., 1896.

479. *Chairman.*] Did you transfer your right, title, and interest in the Gore and Artarmon Estates to Freehill? It was merely a friendly affair. There was an action pending for a small farm of 25 acres—Cann's farm. The Government said that that was vacant land that never had been alienated. It was conveyed by Mr. William Bligh Gore to me in the same deed as the Artarmon Estate.
480. It was a farm separate from the Artamon Estate? Yes; I asked Freehill to be trustee for me in this action by the Crown.
481. The Crown took action against you? Yes.
482. When was that? I think it was about twenty-five years ago.
483. That was when you came into contact with Freehill? Yes. James Hart was the attorney whom I employed. Freehill had a son article to Hart; I thought it would be handy for me to enter Freehill's name with mine in the defence. I went to Freehill and he said he would not defend it—that he would not spend a pound on it. I told Hart, and Hart said he must defend it, there is plenty of security in hand for payment. Freehill did not defend, and judgment in default was signed against him on 18th May, 1871. I defended case, and when the case came on Freehill entered the court and said "Take my name off that list; I have no part in it." Mr. Butler said "Mr. Boyle, will you go on with the action?" and I said "Yes." Judge Fawcett said "If Freehill had any interest it falls to the ground now." I went on with the action and won it against the Crown. The date of the judgment was 13th February, 1872. The clerks in the Survey office were spiteful, and tried to get a new trial. They applied to Judge Hargreaves, and also to Judge Fawcett, and moved the Full Court. The Chief Justice, Sir Alfred Stephen said to Mr. Williams, the Crown Solicitor, "This is three times that you have come before the court for a new trial;—it looks like a persecution. He said "Show me your strongest point." Mr. Williams showed him, and the Chief Justice slapped the papers down, and said there was an erasure on the document—the Cumberland Register.
484. How long have you had possession of the Artarmon Estate? I should think, forty-five years.
485. When did you come into possession;—did you not first meet Gore in connection with the Artarmon Estate about 1849? Yes.
486. And you made a survey of this estate? Yes.
487. W. B. Gore made a certain proposal to you? Yes.
488. That you should protect the interest of himself and family, and he gave you an interest in the estate? Yes.
489. And you have lived on the estate ever since then? Yes.
490. You have occupied the Artarmon Estate? Yes.
491. Do you know anything about old Greene's claim? I do, and I do not.
492. Was not W. B. Gore staying with Greene at one time? Not in my time.
493. When does Greene's claim commence? He was made a sort of a trustee. The papers were in the Colonial Secretary's office. Old Gore was not pleased with his family. The deed that Governor Bourke made was to be confirmed for the wife and children.
494. Was it ever confirmed? It was.
495. Did you ever have any connection with Shuttleworth? No.
496. What title had Shuttleworth? None at all.
497. What was he? He was Gore's Attorney.
498. Did Broughton become possessed of this land through Shuttleworth? I cannot say.
499. Did Shuttleworth ever have any interest in it? None whatever.
500. You entered into some arrangement with Freehill in regard to this land? I gave him orders to make a deed of trust, and he made it out to himself.
501. What was the consideration? There was nothing at all.
502. You employed Freehill, who was a solicitor, to help you in regard to your claim on the land? Yes.
503. You gave him authority to make a deed of trust? Yes; and he virtually made a deed of gift to himself.
504. And did you sign that? I signed it, having great confidence in him.
505. What did he do in regard to that deed? He left it in the Bank.
506. Did he ever sell his right, title, and interest in it? He became insolvent.
507. What did he do with regard to your deed? He lodged it in the Bank of New South Wales.
508. Was it as security for an overdraft? He wanted an overdraft, but they would not give it to him for a while. When he became insolvent I went to Mr. Shepherd Smith, and he said the Bank must keep itself clear.
509. You have always asserted your right to the estate? Yes.
510. Notwithstanding any document you may have given to Freehill, you have asserted your right to the land by possession? Yes.
511. And you came into possession through W. B. Gore? Yes.
512. He asked you, in the interests of his family, to stand by him and protect this land? Yes.
513. You were then a surveyor, and surveyed the whole estate? Yes.
514. What area is there? 940 acres I made of it.
515. You fought this matter in the Supreme Court several times? I did. Sir Alfred Stephen decided in my favour first, in 1851.
516. You have won at times, and lost at times? Sometimes I was sold.
517. You claim that the solicitors did not understand you, and at times threw you over? Yes.
518. Freehill had no right to barter away this title of yours? No.
519. Did he sell to Broughton? No.
520. To whom did he sell? The Bank who held the deed as security sold to Harnett and Stuart.
521. Is it not a fact that the Artarmon Estate has lately been put under the Real Property Act? Yes.
522. Who put it under that Act? Broughton.
523. Then you presume they sold to Broughton? No; they were all mixed up together in it.
524. Has Broughton served you with any notice that he intended to put the property under the Real Property Act? No.
525. He ought to have done so? Yes.
526. You are still in possession? Yes. Shepherd Smith came out to my place. My place was burnt down

down by certain parties, and I had built it up again. Mr. Shepherd Smith asked me to call and see him. I went to see him, and he said that Froehill had a house in George-street, and he told me to go and fetch two honest men, but not to bring a lawyer. After this the Bank sold to Harnett and Stuart. J. Boyle. 21 Oct., 1896.

WEDNESDAY, 28 OCTOBER, 1896.

Present:—

MR. J. C. L. FITZPATRICK, | MR. GORMLY,  
MR. O'SULLIVAN.

E. M. CLARK, Esq., IN THE CHAIR.

Sydney M. Quinlan, Esq., Solicitor, appeared on behalf of Mr. J. H. O. Ffrench.

Chas. Macleay Boyce called in, sworn, and examined:—

- 527. *Chairman.*] You are a solicitor? Yes.
- 528. You have some paper in connection with the papers of the late R. B. Smith, an attested copy of the C. M. Boyce grant to the Gore family? I have what purports to be a copy of a grant. It is supposed to be a copy of a grant to Annie Gore. It purports to be a certified copy of the original. It simply speaks for itself. That is all I know about it. 28 Oct., 1896.
- 529. Is it taken from the Cumberland Register? It is marked on the margin as being entered on the records, No. 28, page 53a. The date is 15th January, 1833.
- 530. That is the date of the grant? Yes.
- 531. Are the names of any of the smaller grants mentioned? I think so, in the boundaries.
- 532. *Mr. Gormly.*] Is that a deed or grant from the Crown? It purports to be a copy.
- 533. *Chairman.*] It is supposed to be entered on the Cumberland Register? Yes.
- 534. Have you a copy of Holdsworth's Grant? I have a copy signed by the Deputy Registrar.
- 535. Was it cancelled? It was intended to be, but there has been a decision at law to the effect that the mere striking through of the grant does not re-vest the land in the Crown.
- 536. Do you know that Holdsworth's Grant formed a portion of that reserve of 140 acres near the St. Leonard's station? I do not know anything about it. At the foot of the copy it says "cancelled," it also says "demised to the Crown."
- 537. Have you any other paper in connection with the estate? Yes; I have a memorial here taken from a bunch of memorials which belongs, I believe, to the Court of Claims. They were found in an office previously occupied by Mr. Pennington. The memorial is dated 5th May, 1834. The date seems to have been written subsequently to the body of the document. If the 5th of May, 1834 is the correct date, then, as the memorial leads up to the grant of 1833, it places the affair in a rather curious position. Memorials were always made before the grant issued.
- 538. What does that memorial set forth? It is supposed to lead up to the grant. 1826 is the date which appears faintly on the paper; it is afterwards written as 1834.
- 539. Then the supposition will be that the actual date would be 1826? Yes; from the front page you would gather that. On the inside, however, there is the same writing as in the body, and it says dated 28th April, 1834. The water-mark of what purports to be the copy grant is 1833. This copy is supposed to be signed by Alexander Macleay.

Ellen Wilhelmine Ffrench called in, sworn, and examined:—

- 540. *Mr. Quinlan.*] You are the widow of J. H. O. G. P. Ffrench? Yes.
- 541. You were Miss Solling? Yes.
- 542. I have here a copy of Governor Macquarie's answer to Mrs. Gore, in which he said he would grant 1,500 acres of land? Yes, that is correct. It is as follows:—

E. W. Ffrench. 28 Oct., 1896.

THE GOVERNOR'S ANSWER TO MR. GORE'S MEMORIAL.

Sydney, 16 August, 1819.

In consideration of the reduced state of Mr. Gore's circumstances and of the consequent distress, his family now labour under, the Governor will give a grant of 1,500 acres of land to Mrs. Gore and her children in trust instead of the 700 acres some time since promised her, in order to enable Mr. Gore to carry into effect his proposed arrangement. The Governor will also direct Mr. Gore, himself, his wife, and children, and also four Government men (which will be assigned to him) to be victualled from the King's Stores for the space of eighteen months from the period of his going to reside on his farm.

LACHLAN MACQUARIE.

- 543. Is there not a letter written in 1832 requesting that the grant should be issued? Yes, that letter is as follows:—

Sir,

Artarmon House, North Shore, 25 January, 1832.

I have the honor to request you to submit to his Excellency the Governor an application in behalf of Mrs. Gore and my children, that the various farms which constitute this estate and have been purchased by me many years ago, shall be consolidated in one grant, as in their present dispersed and separated state they are the source of equal and continued vexations, contentions, and trouble, to myself and the Government Surveyors, who have at this moment run a line for the purpose of locating them to another individual within 40 rods of my hall door through two of my most valuable and oldest grants in the Colony, on the supposition that they were unlocated lands, although they had been located to their respective grantees by Governors Grose and Hunter in the years 1794 and 1796, and had been cleared, resided on, and partially cultivated the grantees, the intermediate purchasers and myself during the long terms of thirty-five or thirty-six years.

I beg leave to state in this place that I am now induced to renew this application for the purpose of preventing an unintentional alienation of any portion or part of the property of my family, by giving a definite defined boundary to it, which may at the same time facilitate such arrangements as Government may hereafter feel disposed to make respecting the sale or otherwise of the adjoining unlocated land.

An authenticated return or list of the several grants above alluded to, taken from the registry of the Supreme Court, is at present in the office of the Colonial Secretary.

I beg sir to call your recollection, that General Darling had conceded his sanction for the consolidation of the above property, including 150 acres (one hundred and fifty acres) grant to me by Governor Macquarie, whose letter if called for I shall produce requiring me to get the various grants consolidated into one grant for the benefit of my wife and children is now in my possession.

I take the liberty of stating to you that the old grants have no boundaries by chain or compass attached to them, which of course make it more difficult to ascertain their limits and locality, their identity having hitherto been found only by the spot the grantees cleared and erected their dwelling on.

I have, &c., WM. GORE. The

E. W.  
French.

The following is a minute from the Governor for a victualling order:—

28 Oct., 1820.

Monday (Noon), Sydney, 17 January, 1820.  
The Governor has received Mr. Gore's letter of date, 14th instant, and in compliance with the request therein contained now sends him a victualling order for himself for eighteen months, and a separate order for the four Government men promised him, who are also to be victualled for eighteen months from the date of their being assigned to him. But the Governor hopes and expects Mr. Gore will, as soon as possible, fulfil his promise, in getting the necessary deeds legally perfected, in conveying (in Trust), the grant of land last given by the Governor, for that especial purpose, to his wife and children; so as to prevent their being deprived thereof by Mr. Gore's creditors.

There is also a letter from the Deputy Surveyor-General, which is as follows:—

No. 32/97.

Sir,

Surveyor-General's Office, 15 February, 1832.

In returning to you the accompanying letter from Mr. William Gore transmitted to me by yours of the 4th instant, No. 32/119, I have the honor to observe (my report not being called for), that the farms to which Mr. Gore alludes as having no boundaries by chain or compass attached to them have been many years since measured and charted on all the maps in this office, and that is only the land lying between the road in front of his residence and these farms so charted which has, as he states, been located to another individual; and indeed had the case been otherwise it would be extremely difficult (after the removal by Mr. Gore of the surveyor's marks) to show that any land had been measured in the situation he describes.

With regard to the request for a deed of consolidation it appears to me very desirable that such an arrangement should take place, at the same time I would submit that the situation of the purchased farms should not be materially altered from that in which they have been so long charted and recognised, because the circumstance of their so being placed on the maps has prevented other individuals from selecting there, and because the alteration of their position would give Mr. Gore a much greater command of road frontage than he can possibly be entitled to, and would afford him the means of closing the access to farms belonging to other settlers.

If, however, Mr. Gore desires any change of these purchased farms I see no great objection to Loder's being placed on the north-east side of road so as to adjoin those which it was proposed he should receive instead of Asser's, Polmont's, and Jennings.

I have, &c.,

T. A. TERRY,

Deputy S.-General.

544. Your husband claimed the whole of this land, the Gore and Artamon estates? Yes. He claimed an interest in those estates personally. He claimed the lot, as belonging to his family.
545. How much was there supposed to be? A thousand acres.
546. You know where Mr. Whiting lives? Yes, I do.
547. You lived there yourself? I lived there with my husband for seven years. That would be twenty years ago.
548. You know where the burial ground is at North Sydney? Yes.
549. Did that form part of the estate? It did.
550. Have you gone over that burial ground? Yes; we had a path through it, and I went over it daily.
551. Do you know how many years your husband was in possession of it? The family had possession of it, and never lived anywhere else. They always had possession of it, in fact they have not lost possession yet.
552. You have heard it stated that Mr. Broughton said that your husband was his agent;—was that true? It was not true. Mr. Broughton swore that my husband was his agent, which was not true.
553. Mr. Broughton also swore that he was on familiar terms with the Gore family—was that true? That was not true.
554. I believe that his position, socially speaking, was very different from that of the Gores? Yes; he must have been a boy in old Mr. Gore's time; they could not possibly have been friends.
555. Do you know the position of these farms? I have seen them on the map.
556. Do you know the place where Green took clay from? I do.
557. Do you know that the Crown have prevented him from taking any more? I have heard so.
558. Is that part of the Gore estate? It is.
559. Do you know whether H. Lamb's 25 acres was part of the estate? It is.
560. And T. Baker's? Yes.
561. Was the land near St. Leonards Railway Station part of the estate? It was where Green took the clay.
562. Do you say that the whole of that land was part of the estate? Yes, the whole of it.
563. *Chairman.*] Was it at one time fenced? When I was married, in 1869, it was all open; there was only a road. All the improvements have been made since my husband's death.
564. *Mr. Quinlan.*] Your husband has been dead 21 years? Yes.
565. Do you know how Broughton claimed the land? Through a mortgage.
566. Whose mortgage? Want and Shuttleworth, and some deed of Mr. William Gore's, I believe.
567. What dealings did your husband have with Mr. Broughton? He had no dealings with him. Mr. Broughton was always annoying and worrying him to have some settlement or he would involve him in a law suit if he did not do as he told him. At last he got from him some paper giving up a portion of the Gore estate. He claimed some right through transactions with old Mr. Gore, but my husband did not recognise Mr. Broughton's claim.
568. *Chairman.*] Do you know anything of Boyle's claim to the Artamon [estate? His claim was never recognised.
569. But he has been in possession for a long time? That 150 acres belonged to Mr. William Gore, son of old Mr. Gore.
570. Of course that 150 acres is in addition to the 1,000 acres mentioned in the consolidated grant? So it ought to have been included.
571. Somebody appears to have given Boyle a deed? I do not know.
572. Do you know how the Green's come into it? They were looked upon as intruders always. Mr. Green never interfered with the land in Mr. French's time.
573. You do not know really much about the Green's? No. Only they were looked upon as intruders.
574. Have you heard that Green's father had a mortgage on the property? He said that he was a trustee.
575. *Mr. Quinlan.*] Do you know whether the late Mr. French claimed to be heir-at-law? He did not.

## ON THE GORE AND ARTARMON ESTATES, NORTH SYDNEY.

Richard Augustus Willoughby Green recalled and further examined:—

576. *Chairman.*] What was the total area of land claimed by you? 550 acres.
577. And you have sold some of that? Yes; I have sold 100 acres conditionally to Messrs. Rodgers, Broughton, Wisdom, and John Williams, late Crown Solicitor.
578. Then you still claim that you hold over 400 acres there? Yes.
579. Were you paid for that 100 acres? The money was paid to my solicitors, but I never saw a shilling of it. The amount was £8,000.
580. They afterwards got the property under the Real Property Act? Yes.
581. You know Holdsworth's ground? Yes.
582. Is that included in this 140 acres claimed by the Government? No. We have always called it the 50 acres farm; but there are two grants in it—Holdsworth's and Bruin's. That is the piece that the Crown has been cutting up and selling. I went and stopped the sale.
583. And you will go and stop the next sale? I shall. I think they are selling it privately.
584. *Mr. O'Sullivan.*] You say that £8,000 was paid to your solicitors? Yes, to Ferguson and Broad. Broad is now in gaol for manipulating the money of clients.
585. Did they get that money, and pay you nothing out of it? They drew it, and I never saw the money.
586. *Chairman.*] Are you sure that they got it? I saw the butts of the checks. It all came out in the bankruptcy examination.
587. Whose cheques? Broughton's, Rodger's, and Wisdom's. I never saw them until they were produced in the Bankruptcy Court, four months after the money was paid. Ferguson never stopped to hear the judgment of the Court, but ran away; and he has never come back.
588. You claim 550 acres of the balance of that area of 1,200 acres? Mr. Broughton set up a claim to 940 acres under a deed which he holds; but I had a deed ten years older than his.
589. He admitted then that you were the owner? Yes; he admitted that by purchasing from me.
590. *Mr. O'Sullivan.*] How did the land pass into your family from the Gore's? By my father purchasing Gore's insolvent estate, and equity of redemption from William Wentworth, and Lawson from Darcy Wentworth's executor.

R. A. W.  
Green.

28 Oct., 1896.

GORE AND ARTARMON ESTATES.

APPENDIX.

A.

[To Evidence of A. Parry Long, Esq., Registrar-General.]

GORE AND ARTARMON ESTATES.

STATEMENT showing Applications respecting same, and also Portions brought under the Real Property Act.

Grantee.	Area of Grant.	Applicant under Real Property Act.	Number of Application.	Date of Application.	Application passed.	Last day for lodging Caveats.	Caveat lodged.	Caveator.	Caveat disposed of.	Certificate of Title issued to—	Date of Issue of Certificate.	Area comprised in Certificate.		Reference to Certificate.		Remarks.				
												Volume.	Folio.	Volume.	Folio.					
Gore, William . . . . . (Part of grant applied for.)	Acres. 150	Broughton, Thomas	7,018	7 Dec., 1886	30 Nov., 1887	9 Feb., 1888, extended to 2 Aug., 1889.	31 Jan., 1888	Boyle, John . . . . .	Lapsed . . . . .	Broughton, Thomas..	2 Mar., 1892	n. r. p. 2 1 7 7	1,048	12	As joint tenants, in quarter part or share.					
							7 Feb., 1888	Boyle, John . . . . .	Withdrawn, 23/2/89 . . . . .	Smith, Emily, Phillips, George, and Phillips, John Jabez.	31 Aug., 1892	and 13 3 2 188 1 17	1,068	151						
							8 Feb., 1888	Matthews, J. J. . . . .	Removed by order of Court, 8/3/89.	Stuart, Kenneth Robison, and Robison, Hugh.	31 Aug., 1892	188 1 17	1,068	152						
							8 Feb., 1888	Knapp, E. J. H. . . . .	Withdrawn, 23/2/89 . . . . .	Broughton, Thomas..	31 Aug., 1892	188 1 17	1,068	153						
Gore, William . . . . . (Part of grant.)	150	Mooney, Francis . . . . .	6,854	29 Dec., 1886	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Application withdrawn.				
																	.....	.....	.....	.....
Roberts, John . . . . .	25	Broughton, Thomas	7,019	4 July, 1887	11 Jan., 1888	30 July, 1889	31 Jan., 1888	Boyle, John . . . . .	Lapsed . . . . .	Broughton, Thomas..	1 Feb., 1892	8 0 30 and 19 1 16	1,042	194	As joint tenants, in quarter part or share.					
Darks, John . . . . .	25	Rogers, Francis Edward, and Broughton, Thomas	6,764	31 Aug., 1886	1 Dec., 1886	6 Jan., 1887	22 Mar., 1888	Bailey, James . . . . .	Removed by order of Court, 20/8/90.	Rogers, Francis Edwd., and Broughton, Thomas	23 May, 1887	73 2 2	836	8						
							30 July, 1889	Bailey, James . . . . .	Lapsed . . . . .							Railway Commissioners of N.S.W.	4 Nov., 1892	3 3 2	1,074	208
							30 July, 1889	Robison, Hugh, and Stuart, Kenneth Robison.	Lapsed . . . . .							Rogers, Francis Edwd., and Broughton, Thomas	23 May, 1887	73 2 2	836	8
(15 Dec., 1886)	Matthews, J. J. . . . .	Removed by order of Court, 20/5/87.	The Registrar-General, on behalf U.S. Lands.	Removed by order of Court, 24/3/88.	Lenthall, Katherine Mary.	6 June, 1880	5 0 11	924	233											
(17 Dec., 1886)	Boyle, John . . . . .	Removed by order of Court, 6/7/88.								8 Sept., 1887	Boyle, John . . . . .	Removed by order of Court, 6/7/88.	Rogers, Francis Edward, and Broughton, Thomas	5 June, 1889	20 2 12 1	924	232			
Sawyer, John . . . . . (Part only of Sawyer's grant.)	25	Chapman, B. H., and Gallagher, John Patk	6,888	24 Jan., 1887	11 May, 1887	21 July, 1887	16 June, 1887	Harnett, R. H., and Stuart, Christiana E.	Removed by order of Court, 24/3/88.	Lenthall, Katherine Mary.	6 June, 1880	5 0 11						924	233	
							10 Aug., 1887	The Registrar-General, on behalf U.S. Lands.												8 Sept., 1887
Darks, John . . . . . (Part only.)	25	Rogers, Francis Edward, and Broughton, Thomas.	6,832	24 Nov., 1886	20 July, 1887	29 Sept., 1887	10 Aug., 1887	The Registrar-General, on behalf U.S. Lands.	Removed by order of Court, 24/3/88.	Lenthall, Katherine Mary.	6 June, 1880	5 0 11	924	233						
Tilley, George . . . . .	25	Thompson, AEd. Willam.	9,909	2 Mar., 1896	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Application withdrawn.				
Tilley, George . . . . . (Part only applied for)	25	Whiting, George Robt.	5,141	13 Jan., 1881	30 Jan., 1884	6 Mar., 1884	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....				
Curry, Daniel . . . . .	25																			
Robinson, Charles . . . . .	25																			
Williamson, James . . . . .	44																			
Asser, Henry . . . . . (Part only of Williamson & Asser's grants.)	30	Whiting, George Robt.	5,141	13 Jan., 1881	30 Jan., 1884	6 Mar., 1884	.....	.....	.....	Whiting, George Robt.	19 Mar., 1884	110 0 0	600	27	.....					

APPENDIX.

Grantee.	Area of Grant.	Applicant under Real Property Act.	Number of Application.	Date of Application.	Application passed.	Last day for lodging Caveats.	Caveat lodged.	Caveator.	Caveat disposed of.	Certificate of Title issued to—	Date of issue of Certificate.	Area comprised in Certificate.		Reference to Certificate.		Remarks.	
												n. r. p.	Volume.	Folio.			
Curry, Daniel Robinson, Charles Williamson, James Asser, Henry (Part only of Williamson & Asser's grants.) Williamson, James	25 25 44 30 44	French, Ellen W.	4,450	26 April, 1880	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Application withdrawn.
Asser, Henry	30																
Jennings, Thomas (Part only) Williamson, James Asser, Henry (Part only.) Williamson, James	20 44 30 44	Innes, Sir J. G. L.	7,469	8 Sept., 1838	19 Dec., 1838	28 Feb., 1880	12 Sept., 1889	Campbell, Chas. J., and Chappel, Herbert	Withdrawn, 5/5/90	Innes, Sir J. G. L.	29 May, 1890	1 1 31 and 4 3 31	970	107	108	As to an undivided moiety, or half-share.	As joint tenants in an undivided moiety.
Asser, Henry	30																
Baker, Thomas	25	Broughton, Thomas	7,010	4 July, 1887	17 April, 1889	23 Aug., 1889	6 July, 1889	Chappel, H., and Campbell, C. J.	Withdrawn, 14/7/91	Broughton, Thomas Minister for Public Works.	1 Feb., 1892 9 May, 1894	23 2 25 0 1 15	1,042 1,126	102 206	.....	Application withdrawn.	
Baker, Thomas (Part only.) Lamb, Henry (Part only.) Lamb, Henry (Part only.) Lamb, Henry (Part only.)	25 25 25 25	Chapman, Benjamin H., & Gallagher, J. P. Wilson, David Magney, John Bede, and Weynton, Herbert Edwin Broughton, Thomas	6,886 5,590 5,600 7,019	18 Feb., 1887 26 July, 1882 26 July, 1882 4 July, 1887	25 May, 1887 16 May, 1883 16 May, 1883 17 April, 1889	4 Aug., 1887 26 July, 1883 26 July, 1883 23 Aug., 1889	2 Aug., 1887 22 June, 1883 22 June, 1883 2 July, 1889	Broughton, Thomas The Registrar-General for U.S. Lands. Broughton, Thomas Ezzy, Benjn. H., Chappel, H., and Campbell, C. J.	Withdrawn, 1/3/92 Lapsed. Withdrawn, 12 3/24 Withdrawn, 14/7/91	The Mercantile Bank Magney, John Bede, and Weynton, Herbert Edwin Broughton, Thomas Railway Commissioners of N.S.W.	2 May, 1892 18 Mar., 1884 13 Mar., 1884 27 May, 1893	2 2 38 2 1 17 2 1 17 10 0 0	1,054 688 688 1,058	3 65 66 238	.....	As to an undivided moiety or half-share.	
Lamb, Henry (Part only.) Evans, Humphrey	25 25	Kingston, John Broughton, Thos.	4,518 7,019	22 Aug., 1877 4 July, 1887	20 Sept., 1893 11 Dec., 1889	1 Dec., 1893 20 Feb., 1890	..... 13 Feb., 1890	..... Matthews, J. J., Chappel, H., and Campbell, C. J.	Land excluded from certificate. Lapsed Withdrawn, 14/7/91	Broughton, Thomas Broughton, Thomas	9 May, 1894 7 Sept., 1891	5 2 10 and 1 2 18 0 1 14 25 2 22	1,126 1,028	208 91	.....	Application withdrawn.	
Dargin, Peter (Part only.) Dargin, Peter (Part only.) Packer, William	25 25 25	Broughton, Thomas Barayeno, James Broughton, Thomas	3,801 6,740 7,019	9 Oct., 1874 22 July, 1890 4 July, 1887	11 Jan., 1883 ..... 11 Jan., 1883	30 July, 1889 ..... 30 July, 1889	31 Jan., 1888 22 Mar., 1888 30 July, 1889	Boyle, John Matthews, J. J. Moffat, H. J.	Lapsed Lapsed Removed: order of Court, 20/5/90	Broughton, Thomas	29 Sept., 1891	22 8 23	1,030	246	.....	Application withdrawn.	
Packer, William	25	Boyle, John	6,483	30 Mar., 1883	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Packer, William	25	Chapman, Benjn. H., and Gallagher, John Patk.	6,093	15 June, 1887	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Packer, William (Applied for as part of above grant, but actually forms no part thereof.)	25	Chapman, Benjn. H., and Gallagher, John Patk.	6,887	24 Jan., 1887	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Application withdrawn. Forms no part of Packer's grant, but is part of the recreation reserve.

APPENDIX.

Grantee.	Area of Grant	Applicant under Real Property Act.	Number of Application.	Date of Application.	Application passed.	Last day for lodging Caveats.	Caveat lodged.	Caveator.	Caveat disposed of.	Certificate of Title issued to—	Date of issue of Certificate.	Area comprised in Certificate.	Reference to Certificate.		Remarks.
													Volume.	Folio.	
Loder, George	25	Broughton, Thos....	3,900	9 Oct., 1874	11 Jan., 1888	23 Aug., 1889	81 Jan., 1888 8 Feb., 1888 22 Aug., 1889	Boyle, John Matthews, J. J. Chappel, H., and another.	Lapsed..... Lapsed..... Withdrawn, 6/7/91.	Broughton, Thos.....	31 July, 1891	a. r. p. 21 3 101	1,024	43	
Loder, George	25	Chappel, Herbert, and Campbell, Chas. J.	7,803	12 Aug., 1839	.....	.....	.....	.....	Land in caveat omitted from certificate of title which issued.	.....	.....	.....	.....	.....	Application withdrawn.
Carr, Daniel	25	Harnett, R. H., senr., by his attorney, R H. Harnett, junr.	7,750	20 June, 1839	30 Oct., 1839	9 Jan., 1890	9 Jan., 1890	Lloyd, L. T	Withdrawn, 2/6/90	Harnett, R. H., senr.	14 July, 1891	18 1 111 and 3 0 29	1,020	221	
Walker, William (Part only of both grants.)	25	.....	.....	.....	.....	.....	9 Jan., 1890	Davenport, J. T., and another.	Land in caveat omitted from certificate which issued.	.....	.....	.....	.....	.....	
Carr, Daniel	25	Lloyd, Lancelot T., official assignee of R. A. W. Green.	8,223	22 Oct., 1890	26 Aug., 1891	5 Nov., 1891	9 Jan., 1890	Nichols, F. S., and others.	Removed; order of Court, 22/5/91.	Lloyd, Lancelot T., official assignee of R. A. W. Green.	23 Nov., 1891	1 3 173	1,037	7	
Loder, George (Part only of both grants.)	25	Broughton, Thos....	7,019	4 July, 1837	21 May, 1890	31 July, 1890	29 July, 1890 30 July, 1890	Greer, James Nichols, Francis Stephen, Campbell, Charles Jackson, Chappel, Herbert	Withdrawn, 3/11/90.... Removed by order of Court as to Nichols, 21/11/90; withdrawn by Chappel, 23/10/90; withdrawn by Chappel and Campbell, 14/7/91.	Broughton, Thos.	1 Feb., 1892	20 2 243	1,042	191	
Turner, Robert	25	Broughton, Thos....	226	12 Sept., 1863	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Application withdrawn.
Wright, William (Part only.)	25	Broughton, Thos....	3,790	3 Oct., 1874	.....	.....	24 July, 1888	Cook, Wm. Jas., and another.	.....	.....	.....	.....	.....	.....	Application abandoned.
Turner, Robert (Part only.)	25	Cook, William James.	3,797	5 Oct., 1874	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Application withdrawn.
Turner, Robert	25	Cook, Wm. Jas., and Cook, Edwd Fitz- genud.	5,360	14 Oct., 1831	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Application withdrawn.
Turner, Robert	25	Mackenzie, A. G.	907	16 Nov., 1833	25 Nov., 1836	1 Jan., 1880	8 Dec., 1885 22 Dec., 1885	Greer, James Broughton, Thos	Withdrawn, 19/6 39	.....	.....	.....	.....	.....	Certificate issued to Broughton, Thomas, vol. 1,042, fol. 101.
Wright, William	25	Broughton, Thos....	7,019	4 July, 1837	11 Dec., 1889	20 Feb., 1890	20 Feb., 1890	Nichols, F. S.	Removed; order of Court, 21/11/90.	Broughton, Thomas..	19 Dec., 1890	27 2 26	991	103	
Wright, William	25	Broughton, Thos....	226	12 Sept., 1863	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Application withdrawn.
Gore, William	10	Broughton, Thos....	7,157	2 Nov., 1837	31 July, 1839	17 Oct., 1880	16 Oct., 1880	French, E. W., and Solling, W. B.	Removed; order of Privy Council, 28/7/93.	Broughton, Thos....	24 Nov., 1893	0 0 37	1,113	39	
Gore, William	10	French, Ellen W....	4,024	29 June, 1877	.....	.....	17 Oct., 1880	Solling, W. B. Chappel, H., and Campbell, C. J.	Order of Court, 5/3/90.	.....	.....	.....	.....	.....	Certificate issued to Broughton, Thos., on order of Privy Coun- cil (See above appli- cation 7,157.)
Cann, Daniel	25	Broughton, Thos....	8,500	20 Oct., 1891	21 Dec., 1892	3 Mar., 1893	28 Feb., 1893 1 Mar., 1893	Stanley, Fredk. Boyle, John	Removed; order of Court, 10/3/93 Removed; order of Court, 10/3/93.	Broughton, Thos....	10 May, 1893	11 2 203 0 3 24	1,003	27	As to an undivided moiety, or half-share As joint tenants in one- quarter share.
Cann, Daniel	25	Broughton, Thos....	8,500	20 Oct., 1891	21 Dec., 1892	3 Mar., 1893	3 Mar., 1893	Campbell, Chas. J.	Removed; order of Court, 10/3/93.	Smith, Emily; Phil- lips, George; and Phillips, John Jabez	10 May, 1893	11 2 264 0 3 24	1,003	28	As joint tenants in one- quarter share.
Cann, Daniel	25	Broughton, Thos....	8,500	20 Oct., 1891	21 Dec., 1892	3 Mar., 1893	3 Mar., 1893	Campbell, Chas. J.	Removed; order of Court, 10/3/93.	Stuart, Kenneth R., and Robison, Hugh, Railway Commission- ers of N.S.W.	10 May, 1893	11 2 201 6 3 24	1,003	29	As joint tenants in one- quarter share.
Cann, Daniel	25	Stanley, Frederick ..	8,797	4 July, 1892	.....	.....	.....	.....	.....	Minister for Public Works.	11 April, 1895	3 2 24	1,150	103	Application withdrawn.

## E.

[Appended by the Committee.]

Acres, 1,000.

By His Excellency Major-General Sir Richard Bourke, Knight Commander of the Most Honorable Military Order of the Bath, Captain-General and Governor-in-Chief of the Territory of New South Wales and its Dependencies, and Vice-Admiral of the same, &c., &c.

BE it known unto all men by these presents that whereas by a promise made by Governor Macquarie to Annie Gore, wife of William Gore, of a grant of land for the use of the said Annie Gore and her children, and in consideration of the surrender of numerous grants, comprising the Artarman Estate, Lane Cove, in the district of Hunter's Hill, to the Crown. I, the said Major-General Sir Richard Bourke, in pursuance of the powers by His Majesty the King vested in me as Governor of the said Territory and its Dependencies, for and in consideration of the said surrender by William Gore, the husband of the said Annie Gore, of the said grants of the Artarman Estate to the Crown, do hereby grant unto the said Annie Gore, and the children of the said Annie Gore and William Gore, their heirs and assigns, subject to the reservations and conditions hereinafter mentioned, all that parcel of land containing by admeasurement 1,000 acres of land, situate in the district of Hunter's Hill, county of Cumberland: Commencing at the south-west corner of Peter Dargon's grant of 25 acres; bounded on the south boundary of that grant east 10 degrees north 16 chains; thence by the east boundary of that grant and the east boundary of Humphery Evans's grant of 25 acres north 10 degrees west 32 chains; thence by the north boundary of that grant west 10 degrees south 16 chains; thence by a line bearing north 10 degrees west 41 chains; thence by a line bearing west 12 chains 50 links to the east boundary of William Gore's 150-acre grant; thence by the east boundary of that grant north 29 chains to its north-east corner; thence by its north boundary west 59 chains; thence by its west boundary south 8 chains 50 links; thence on the north-west by a line bearing west 40 degrees south 48 chains 54 links to the north-west corner of Gilbert Goodlett's 25-acre grant; thence by a line bearing south 40 degrees east 16 chains to the south corner of that grant; thence by the north-west boundary of David Carr's grant of 25 acres west 40 degrees south 16 chains; thence by a line bearing south 40 degrees east 92 chains to Gore's Creek; thence by a line bearing east 42 chains to the western boundary of Edward Woolstencroft's grant of 524 acres; thence on the east by a line bearing north, being the western boundary of Woolstencroft's grant, to the point of commencement,—with all the appurtenances whatsoever, reserving as hereafter reserved, to be held unto the said Annie Gore and the children of the said Annie Gore and William Gore, their heirs and assigns, for ever, on condition of paying therefor yearly to His Majesty, His heirs and successors, the quit-rent of one peppercorn if demanded, reserving to the Government the right to a public road through the same, and also reserving for the use of the Crown such timber as may be deemed fit for naval purposes.

Given under my hand and the seal of the Territory, at Sydney, in New South Wales, this 15th day of January, in the year of our Lord 1833.

(L. S.) RICHARD BOURKE.

Signed and sealed in the presence of—

GEO. KENYON HOLDEN.

This is a true copy of the original.—ALEX. McLEAY.

WE, the undersigned clerks to Robert Burdett Smith, of No. 169, King-street, Sydney, solicitor, do hereby certify that we have examined what purports to be a certified copy of the original grant under the hand of Sir Richard Bourke, Governor of the Territory of New South Wales, and certified as being a true copy of the original grant by Alex. McLeay, Colonial Secretary, and that the writing on this and the preceding sheet of brief-paper is a true and accurate transcription thereof.

HENRY A. BOYD.  
JOHN RIORDAN.

18 April, 1894.

Entered on record by me in Register of Cumberland Purchases, No. 28, page 53A, this 4th day of February, 1833.  
ALEX. McLEAY,  
Colonial Secretary and Registrar.

[5 plans.]

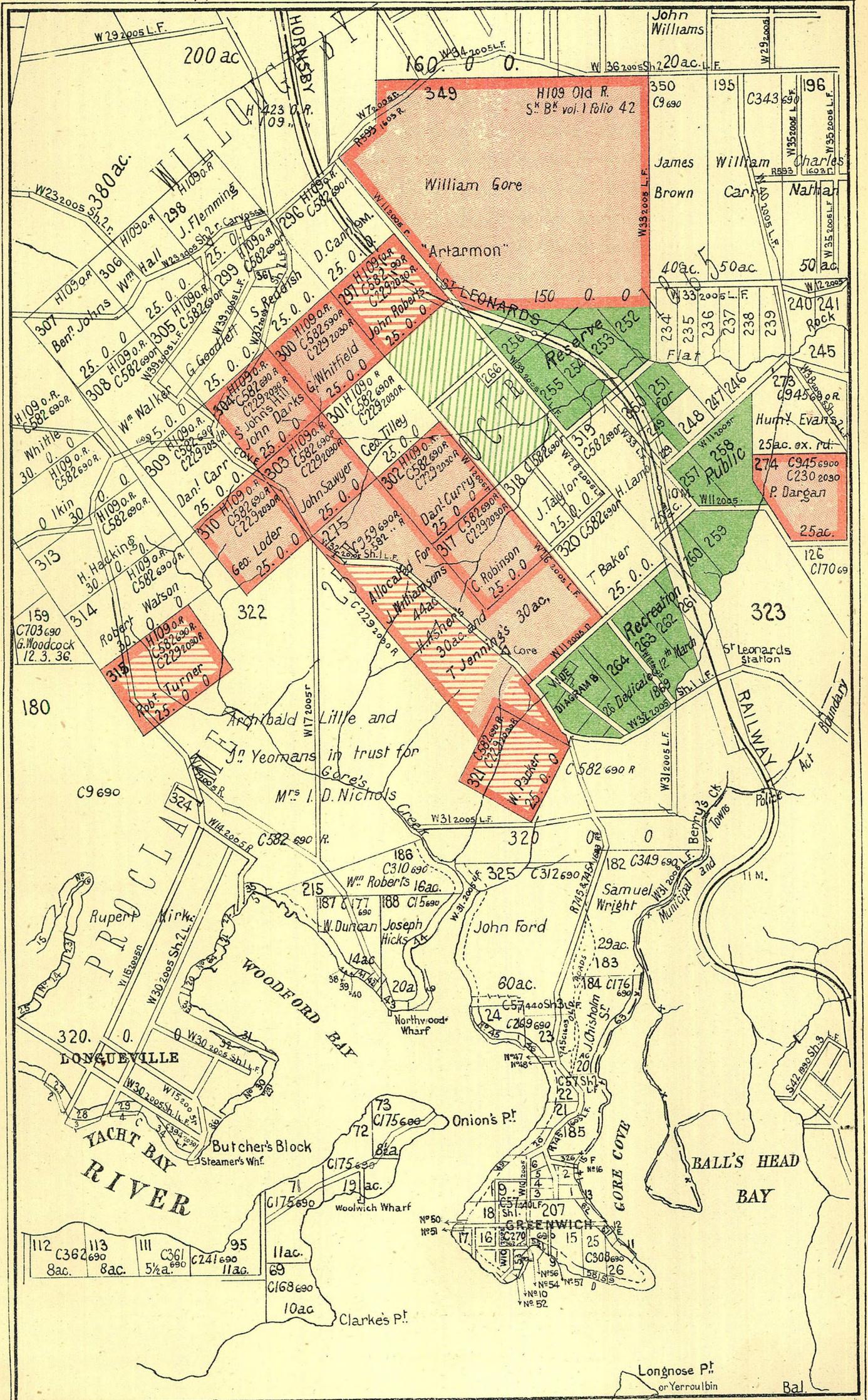




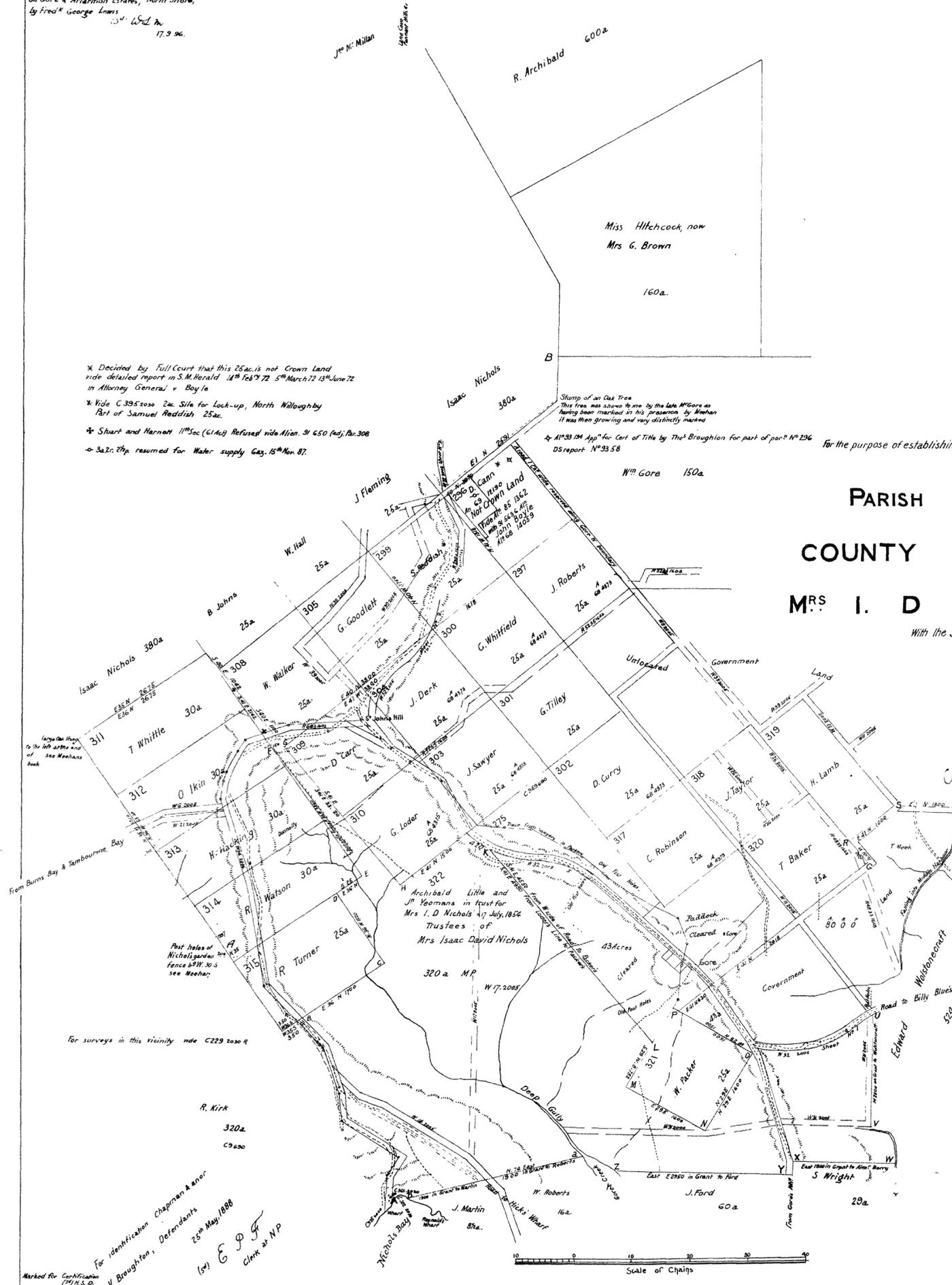
APPENDIX B.

Handed in before the Select Committee on Gore and Artarmon Estates, North Shore." W.S.M. 8/8/96.

[To Evidence of M<sup>r</sup> J. A. Bronsdon]



C 582 690  
Produced before the Select Committee  
On Gore & Arlman Estates, North Shore,  
by Fred<sup>r</sup> George Lewis  
17.9.96.



SURVEY

For the purpose of establishing the true position of several old Grants of Land  
in the  
PARISH OF WILLOUGHBY  
in the  
COUNTY OF CUMBERLAND  
And for Marking out  
MRS. I. D. NICHOLS' 320 ACRES MP.  
With the survey and measurement thereof  
1849.

H. M. R. 31368  
S. B. Vol 5 fol 65  
Vol 6 fol. 30

N<sup>o</sup> 80 225 dated 8<sup>th</sup> Dec 1894 for 25ac granted to H. Lamb vide A<sup>o</sup> 844785  
declared void vide A<sup>o</sup> 85610

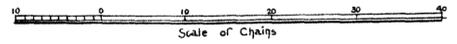
N<sup>o</sup> 275, 296, 297, 299, 305, 308, 313 & 317 to 322  
Ad<sup>o</sup> on Parish Map

Reference to Corners	BG	Links
A Broad arrow	270	100
B Stake		
C Black Butt	324	264
D Stake		
E Mark on Rock		
F Corner of fence	324	10
G Stake		
H Black butt Sapling	229	3
I Squared Stump	49	100
K Stake		
L Squared Gum Sapling Stump		
M Crooked black butt Sapling	327	13
N Stringy bark Sapling	45	6
O Gum Sapling	120	6
P Gum Sapling	340	18
Q Squared stump		
R Large black butt stump	270	17
S Black butt	301	25
T Stringy bark sapling	180	8
U Corner of fence		
V Post of fence		
W Stake		
X Corner post of fence		
Y Stake		
Z Stump of Sapling		
a Stake and mark in log	254	43
b Mark in rock		

Report and description transmitted to the Surveyor General 20<sup>th</sup> September, 1849

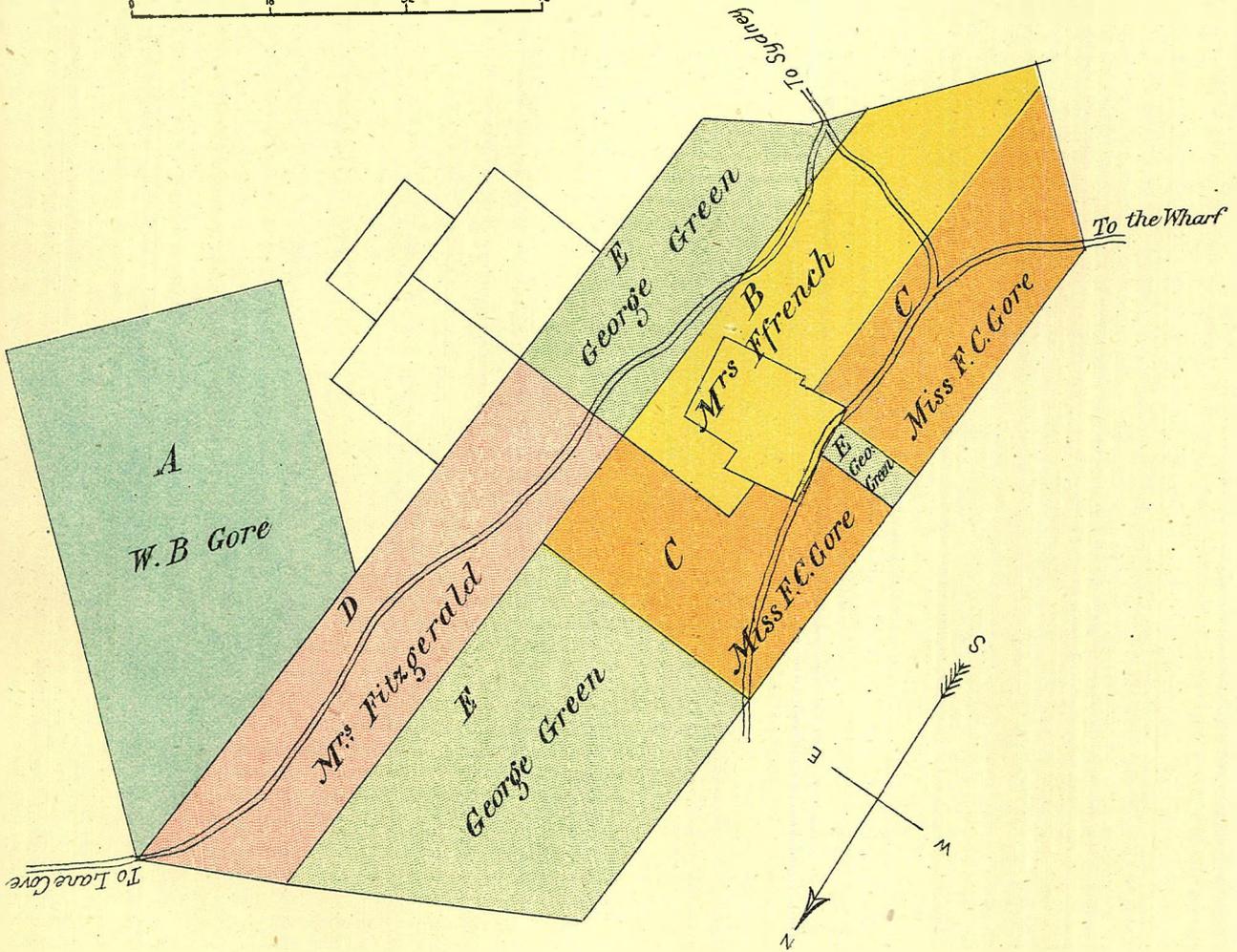
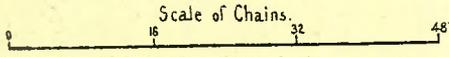
St Edward J. H. Knapp  
Surveyor.

Marked for Certification  
V Broughton, Defendants  
25<sup>th</sup> May 1888  
E P F  
Clerk at N P



*D1.*  
*[Appended by the Committee]*

*COPY OF PLAN attached to attested copy  
of Deed of Partition Gore and others,  
1846.*



*The above is the Plan or Chart above referred to*

- |                               |          |
|-------------------------------|----------|
| <i>W. B. Gore</i>             | <i>A</i> |
| <i>Charlotte S. W. French</i> | <i>B</i> |
| <i>Frances C. Gore</i>        | <i>C</i> |
| <i>George Green</i>           | <i>E</i> |
| <i>Mrs Fitzgerald</i>         | <i>D</i> |

*I made this copy from the Original*

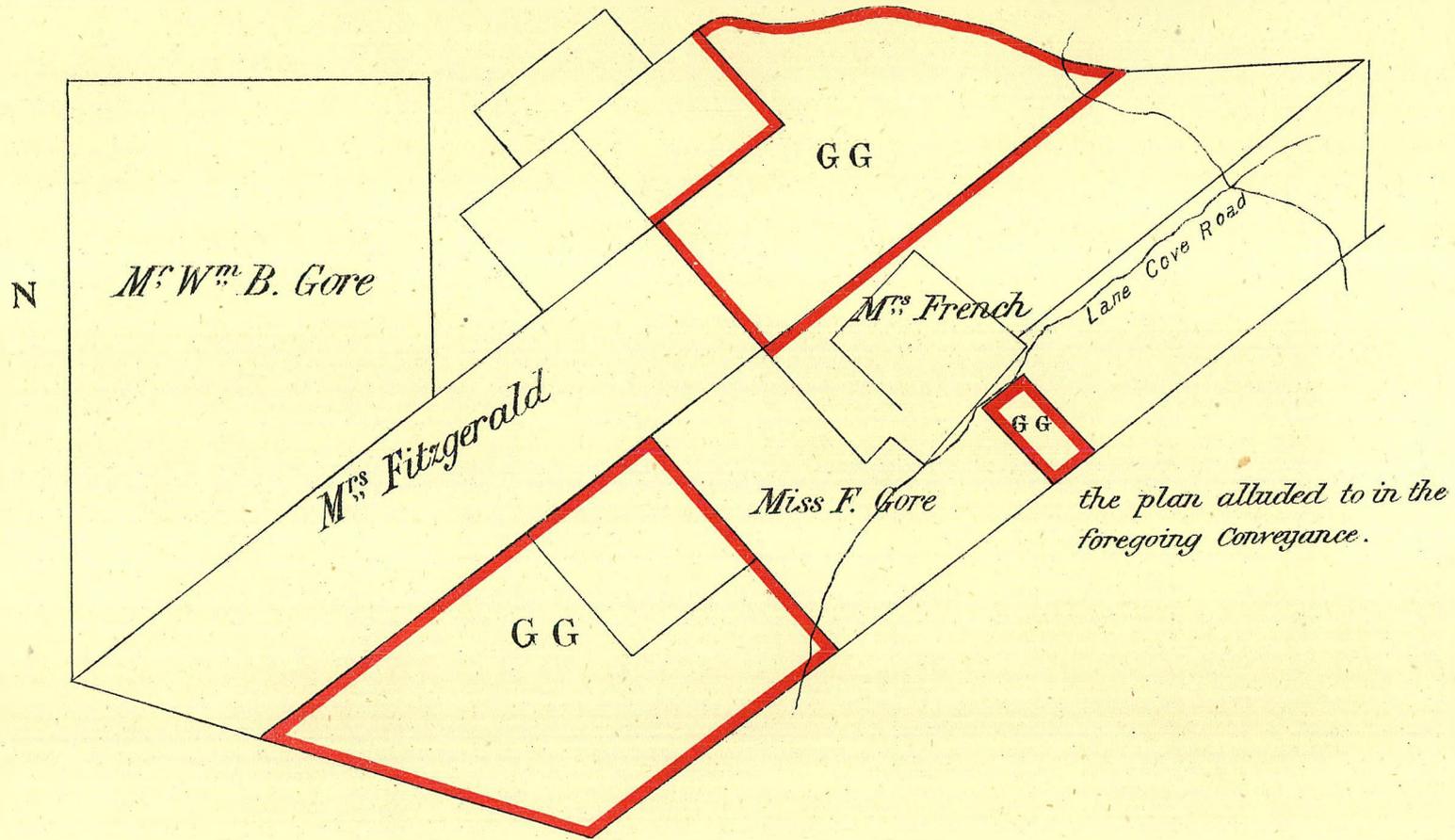
*Howell*

*I examined this with the Original*

*Lumsden*

*(Sig. 388)*

*COPY of Plan attached to Copy of Conveyance  
26<sup>th</sup> Sept 1846... George Green to John and  
William Stewart.*



*the plan alluded to in the  
foregoing Conveyance.*

*(Sig. 388.)*

1896.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

---

**PATENTS LAW AMENDMENT BILL.**

(PETITION FROM ANDREW ARMSTRONG, OF No. 5, SPRING-STREET, SYDNEY, AGAINST.)

---

*Received by the Legislative Assembly, 6 October, 1896.*


---

To the Honorable the Speaker and Members of the Legislative Assembly in Parliament assembled.

The humble Petition of Andrew Armstrong, of No. 5, Spring-street, Sydney,—

SHOWETH:—

That a Bill, intituled the "Patent Laws Amendment Bill," is now under the consideration of your Honorable House.

That your Petitioner views with alarm the effect of the passage of such Bill into law, inasmuch as the interests of mining development under systems of treatment now being used with advantage, will, by the passage of such Bill, be placed under charges which will prove severely detrimental to a large number of individuals and also injurious to the general interests of the whole community.

Your Petitioner therefore humbly prays that the passage of such Bill will be carefully considered, and action taken thereon which will be, in the opinion of your Honorable House, of most advantage to the people of New South Wales.

And your Petitioner, as in duty bound, will ever pray.

ANDREW ARMSTRONG.

---

 Similar Petitions were received—

On 6th October, 1896, from John Howell, Managing Director of the Smelting Company of Australia (Limited), of 56, Margaret-street, Sydney.

" " from Stephen Henderson, representing the Camden Syndicate, of London.

" " from Henry Hudson, representing the Clyde Smelting Works.

" " from Frank Jarvis, Secretary to the Illawarra Harbour and Land Corporation (Limited).

" " from Leonard Dodds, Pitt-street, Sydney.

" " from F. F. Marks, Attorney for the Anglo-Australian Exploration (Limited).

On 7th October, 1896, from William Springthorpe Dowcl, of Vickery's Chambers, Sydney.

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1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

---

COLOURED RACES.

(PETITION FROM CERTAIN RESIDENTS OF THE NORTH COAST FOR THE RESTRICTION OF THE INFLUX OF.)

---

*Received by the Legislative Assembly, 3 November, 1896.*

---

To the Honorable the Speaker and Members, Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned residents of the North Coast, and others, interested in the well-being of the Colony,—

RESPECTFULLY SHOWETH:—

That a grave danger is threatening the well-being and prosperity of New South Wales by the steadily increasing influx of various coloured foreigners into this Colony.

That within the last two or three years a number of coloured aliens, chiefly Hindoos, have found their way into these districts, as shown by recent departmental returns.

That there are within easy distance of our shores hundreds of millions of coloured people existing under conditions so greatly inferior to our own as to constitute a menace to the moral, social, and political well-being of the community.

Your Petitioners, therefore, pray that in your wisdom you will devise and enact such means as will stop or restrict the further influx of coloured persons of all races into this Colony.

And your Petitioners, as in duty bound, will ever pray.

[*Here follow 176 signatures.*]



- 1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

**BETTING AND GAMBLING SUPPRESSION.**

(PETITION FROM W. WOOLS RUTLEDGE, SUPERINTENDENT, CENTRAL METHODIST MISSION, IN FAVOUR OF.)

*Received by the Legislative Assembly, 12 November, 1896.*

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the Congregation of the Citizens of Sydney, worshipping at the Centenary Hall, York-street, Sydney, and numbering upwards of fifteen hundred persons,—

HUMBLY SHOWETH:—

That, in the opinion of this congregation, the alarming increase of the practice of gambling, especially amongst the younger portion of the community, by means of "consultations" and the facilities offered by the publication in the daily press of the state of the betting market, and the encouragement otherwise given to the vice of gambling, calls for some urgent measures for its suppression.

Your Petitioners, therefore, humbly pray that your Honorable House will be pleased to pass into law some measure which will prevent the spread of this evil, which is sapping the foundations of society, and destroying that principle of honest industry which is one of the fundamentals of a nation's stability.

And your Petitioners, as in duty bound, will ever pray.

Signed on behalf and at the request of the Petitioners,—

W. WOOLS RUTLEDGE,  
Superintendent, Central Methodist Mission.



1896.

LEGISLATIVE ASSEMBLY.  
NEW SOUTH WALES.

**EXHIBITIONS.**  
(STATEMENT SHOWING COST OF.)

*Printed under No. 25 Report from Printing Committee, 5 November, 1896.*

[Laid upon the Table of the House in answer to Question No. 2 of 15th October, 1896.]

**Question.**

- (2.) EXHIBITION HELD IN THE GARDEN PALACE GROUNDS:—MR. PERRY (for Mr. SEE) asked THE COLONIAL SECRETARY,—  
(1.) What was the total cost to the Colony of the Exhibition held in the Garden Palace Grounds?  
(2.) What has been the cost up to date to the Colony of other Exhibitions at which the Colony was represented?

**Answer.**

- (1.) £274,761 17s. 3d.  
(2.) £199,714 12s. 8d. (Per statement attached.)

STATEMENT showing the cost of various Exhibitions.

	£	s.	d.	£	s.	d.
London, 1862 ... ..				7,426	17	4
Melbourne, 1866 ... ..				1,075	0	0
Paris, 1867 ... ..	10,576	13	7			
<i>Less receipts</i> ... ..	4,907	10	1			
				5,669	3	6
Metropolitan, Intercolonial, viz.—						
Agricultural Society of New South Wales, 1869 ... ..				1,000	0	0
Intercolonial, 1870 ... ..				4,000	0	0
London, 1871 ... ..				250	0	0
Melbourne and Philadelphia, 1876 ... ..				5,081	15	0
Philadelphia, 1876 ... ..				2,775	6	6
Brisbane, 1876 ... ..				350	0	0
Paris, 1878 ... ..	10,515	19	4			
<i>Less receipts</i> ... ..		16	8			
				10,499	11	2
Calcutta, 1883-4 ... ..	5,571	8	11			
<i>Less receipts</i> ... ..		14	13			
				5,556	15	11
Melbourne, 1880 ... ..	9,684	16	8			
<i>Less receipts</i> ... ..		35	1			
				9,649	15	2
Grafton, 1882 ... ..				500	0	0
Bordeaux Wine, 1882... ..				1,598	2	11
Amsterdam, 1883 ... ..	5,688	14	8			
<i>Less receipts</i> ... ..		440	8			
				5,248	5	10
International Juvenile Industrial, at Parramatta, 1883 ... ..				998	19	1
International Fisheries, London, 1884 ... ..	2,806	11	6			
<i>Less receipts</i> ... ..		34	2			
				2,772	9	0
Carried forward ... ..				64,452	1	5

							£	s.	d.	£	s.	d.
	Brought forward	...	...	...	...	...	.....			64,452	1	5
Colonial and Indian, 1885	...	...	...	...	...	...	25,150	15	2			
<i>Less</i> receipts	...	...	...	...	...	...	657	5	4			
										24,493	9	10
Adelaide Jubilee, 1887	...	...	...	...	...	...	.....			13,556	19	7
Melbourne Centennial, 1888	...	...	...	...	...	...	38,461	12	7			
<i>Less</i> receipts	...	...	...	...	...	...	79	17	8			
										38,381	14	11
New Zealand and South Seas, 1889	...	...	...	...	...	...	.....			9,846	12	4
London Mining, 1890...	...	...	...	...	...	...	.....			9,847	14	0
Ballarat, 1890 ...	...	...	...	...	...	...	.....			224	7	8
Tasmania, 1892	...	...	...	...	...	...	.....			2,637	10	0
World's Columbian, Chicago, 1892	...	...	...	...	...	...	36,290	11	5			
<i>Less</i> receipts	...	...	...	...	...	...	16	8	6			
										36,274	2	11
	Total...	...	...	...	...	£	.....			199,714	12	8
International Exhibition, Sydney, 1879	...	...	...	...	...	...	318,966	16	8			
<i>Less</i> receipts	...	...	...	...	...	...	44,204	19	5			
										274,761	17	3
	GRAND TOTAL	...	...	...	...	£	.....			474,476	9	11

Sydney : Charles Potter, Government Printer.—1895.

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