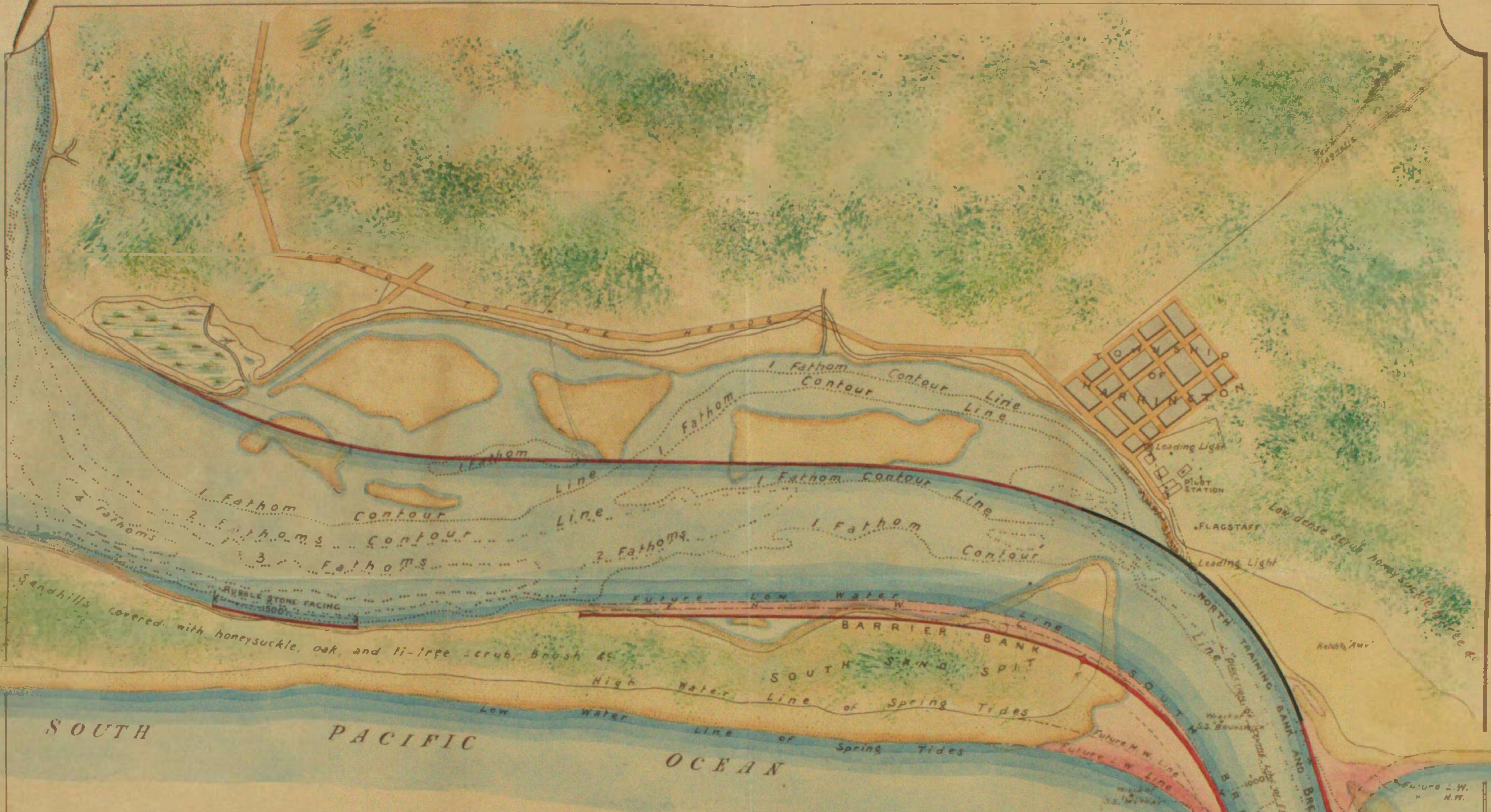







37-



NEW SOUTH WALES HARBOURS
MANNING RIVER ENTRANCE

SCALE 1000 FEET TO ONE INCH

NOTE
 Work completed shown thus 
 Work now recommended 
 Remainder of scheme 

Laid upon the Table and
 referred to the P. of Committee
J. W. H.
 6.7.98

1898
Presented to the Printing Committee
6.7.98

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NEW SOUTH WALES.

27/98

PARLIAMANTARY STANDING COMMITTEE ON
PUBLIC WORKS.



One plan
with plan

REPORT

TOGETHER WITH

MINUTES OF EVIDENCE, APPENDICES, AND PLANS,

73

RELATING TO THE PROPOSED

HARBOUR WORKS AT MANNING RIVER.

Presented to Parliament in accordance with the provisions of the Public Works Act,
51 Vic. No. 37.

Printed under No 2 Report from Printing Committee
6 July, 1898

SYDNEY: WILLIAM APPELEGATE GULLICK, GOVERNMENT PRINTER.

1898.

NEW SOUTH WALES.

PARLIAMENTARY STANDING COMMITTEE ON
PUBLIC WORKS.

REPORT

TOGETHER WITH

MINUTES OF EVIDENCE, APPENDICES, AND PLANS, *7*

RELATING TO THE PROPOSED

HARBOUR WORKS AT MANNING RIVER.

Presented to Parliament in accordance with the provisions of the Public Works Act,
51 Vic. No. 37.

SYDNEY: WILLIAM APPLIGATE GULLICK, GOVERNMENT PRINTER.

MEMBERS OF THE COMMITTEE.

LEGISLATIVE COUNCIL.

The Honorable FREDERICK THOMAS HUMPHREY, 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 HASSALL, Esquire.
GEORGE BLACK, Esquire.
FRANCIS AUGUSTUS WRIGHT, Esquire.
FRANK FARNELL, Esquire.

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

HARBOUR WORKS AT MANNING 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 constructing Harbour Works at Manning River," have, after due inquiry, resolved that it is expedient the proposed works, as referred to the Committee, be carried out with such modifications as are suggested in their Report; and, in accordance with the provisions of sub-section (iv) of clause 13 of the Public Works Act, report their resolution to the Legislative Assembly:—

SIR JOHN COODE'S SCHEME.

Ever since 1852, the Committee are officially informed, the Government has found it necessary, in order to maintain the navigation of the Manning, to expend large sums of money on dredging, the total sum so expended up to the end of 1897 amounting to £54,774. Of this sum about £14,470 has been spent at or near the entrance. But while this work has given a measure of relief, it has always been felt that nothing short of the construction of walls and breakwaters for the training and concentration of the river currents could give satisfactory and permanent results. The Government therefore obtained from Sir John Coode a report as to the nature of the works which, in his opinion, would best secure the end in view, and in 1889 he recommended the construction of training-walls and breakwaters as follows:—

South Breakwater.—A rubble mound, commencing at the eastern termination of the south sandspit, and extending therefrom for a length of 4,000 feet, the inner portion being curved, and the outer length carried on a straight line, running in an east-south-east direction.

North Training-bank.—A low rubble bank, commencing from the rocky ledge under Flagstaff Hill, and extending thence on a curved line 2,300 feet.

Barrier Bank.—A rubble bank, about 4 feet above high water, extending from the root of the south breakwater in a southerly direction about 5,200 feet, to prevent the erosion of the south spit and the outflanking of the new works by the discharge of flood-waters.

Rubble Facing.—Rubble facing, a length of about 1,500 feet of the river-bank at the root of the South Spit.

North Breakwater.—A rubble mound 2,200 feet long, to seaward and curved, and finishing with a straight length almost parallel to the south breakwater, the opening between the two works being 800 feet. This width, Sir John Coode "believed would be sufficient for the discharge of flood-waters without creating a gorge, especially bearing in mind that it is not proposed, at all events in the first instance, to close Farquhar Inlet."

The

The effect of the proposed works when completed would be to form an entrance to the Manning, having a depth of not less than 12 feet at low water, or 16 feet at high water of spring tides.

The estimated cost of the works was as follows :—

South Breakwater...	...length, 4,000 feet	...	...£118,200
North Training-bank	... „ 2,300 „	...	... 7,400
Barrier Bank to South Spit	„ 6,700 „	...	... 8,630
North Breakwater...	... „ 2,200 „	...	... 57,700
Leading lights, buoying and lighting channel	...	...	... 2,000
			£193,230
	Say	...	£194,000

THE DEPARTMENTAL SCHEME.

2. The scheme referred to the Committee for inquiry is, to some extent, similar to that of Sir John Coode, the difference being the addition of a river wall extending up-stream from the inner side of the north training-wall, and the omission of a wave basin at the northern side of the entrance. It consists of two breakwaters, 800 feet apart, at the north and south sides of the river entrance respectively, and the continuation of training walls, at a lower level, up-stream to confine and train the river waters, and also the construction of some stone facing at a portion of the south bank of the river to prevent erosion. The total length of the breakwaters, training walls, &c., in this scheme, is about 25,000 feet, and the estimated cost £222,500; but it is thought that, for the present, the scheme may be modified by reducing the total length of the breakwaters, and walls to a little over 19,000 feet, at an estimated cost of about £100,000. This is in addition to work already done in the construction of a portion of the north training-wall and breakwater at a cost of £23,020.

On the completion of the modified scheme, the depth of water at the entrance, the officers of the Department consider, should be ample for all vessels likely to use the port for many years to come.

LOCAL REPRESENTATIONS.

3. After the receipt of Sir John Coode's report the residents of the towns on the river petitioned the Government to take some steps towards improving the entrance. They represented that for many years past, owing to the treacherous state of the bar, the people of the district had suffered great loss and inconvenience; connection with the metropolis had been uncertain, and the casualties to shipping had been so numerous that in order to make trade profitable, steamship-owners had been forced to charge almost prohibitive rates of freight. It was estimated that £60,000 would not cover the losses at the bar during the past twenty years, and in 1893 alone they had reached £10,000. In May, 1894, the Minister requested the Engineer-in-Chief "to report, as soon as possible, whether any work, at a comparatively small cost, could be carried out which would be of material benefit to this entrance, say, perhaps, the northern training-wall; if so, it might be desirable to do this work at once." Mr. Darley thereupon had an estimate prepared of the probable cost of opening up a quarry at Crowdy Head, constructing a tramway thereto, providing plant, tools, &c., and constructing the north training-bank, and found that the work could not be carried out for less than £20,000. He suggested, however, testing the market by preparing a specification which could be drawn up to provide for the contractor finding the stone, either by bringing it down the river or from Crowdy Head or from any other source he might find available; the contractor to provide all plant, &c., and complete the work at a price per ton. Tenders were thereupon invited, the estimated cost being put down at £16,000. The lowest tender was at a rate of 3s. 8d. per ton, and a vote having been taken on the Loan Estimates, this tender was accepted for the construction of the north training-wall on 29th December, 1894, and the work is still in progress.

THE MANNING RIVER AND DISTRICT.

4. The Manning flows through a thickly-settled agricultural and pastoral district, embracing the southern portion of the county of Macquarie and the north-eastern portion of the county of Gloucester. The river flats and low lands generally through which it runs are exceedingly fertile, and said to be particularly adapted to the growth of maize and tobacco. The good land, however, does not extend far back, and all of it may be said to have been taken up. The farmers do not cultivate their holdings to the extent possible, and in that respect the land in occupation may be made to support a larger population than it has upon it at present. On the upper part of the river, or of some of its tributaries, opportunity exists for settlement. Most of the tributaries have upon them what is called second-class agricultural land; but, generally speaking, the land available in the district at the present time is only suitable for grazing purposes, and much of it is of poor quality. Maize has been, so far, the principal product of the district. Dairying has commenced, and the industry is assuming considerable dimensions. Large quantities of timber are exported.

The towns upon the main river though, with the exception of Taree, not large, show signs of prosperity and progress.

THE RIVER BAR AND ENTRANCE.

5. The difficulties in connection with the bar and the channel at the entrance of the Manning arise from the shifting and uncertain nature of the former and the shallowness of the latter, caused mainly by the want of works to shelter the entrance from the effects of heavy weather, and to concentrate and guide the river currents so as to deepen the channel permanently. The river has no headlands—it discharges into a bight; and its mouth being exposed to the full force of the worst gales experienced on the coast, the entrance is intricate and dangerous. Inside the entrance the sand-spit, which forms in that locality the southern bank of the river, and is partly covered with ti-tree scrub, has been encroached upon by the sea to such an extent that there is danger of either it or the river breaking through and a new channel being formed; and the protection of the bank at this spot, by the construction of a rubble wall on the river side, is part of the proposed works. In the same locality, but nearer the entrance and on the Harrington side of the stream, is a place known locally as the "Narrows," which frequently proves a serious obstruction to vessels passing in and out of the river.

EFFECT OF THE WORK ALREADY CARRIED OUT.

6. From the inspection of the river made by the Committee, as well as from the evidence given in the inquiry, it is apparent that, in connection with the improvement of the river and the construction of the proposed works, the three principal ends to be attained are, the removal of the bar by providing a permanently deep channel at the entrance, the scouring away of the sand which forms the "Narrows", and the protection of that part of the southern bank of the river where there is danger of the river or sea breaking through.

In order to do something towards lessening the difficulties with which vessels trading to the Manning are beset, the Department of Public Works commenced in 1895, to construct a north training-wall, and this work has been continued until the wall is now 3,287 feet in length. The effect of it, the departmental officers say, has been beneficial by closing a channel that passed out to sea in a north-easterly direction near the village of Harrington, and behind the site of the training-wall, and by, in this manner, confining the river outlet to the channel now used. While the two channels were open it seemed, the Engineer-in-Chief states, that neither would ever be satisfactory, and he considers that nothing will tend to maintain deep water in the river more than a properly-constructed north training-wall.

The Committee, however, are of opinion that the effect of first constructing the northern wall has been to make it necessary to greatly increase its strength. Exposed as it is to the seas breaking at the river entrance, it has become necessary, in order to prevent its destruction and make it in any way effective, to build it of a height and size only required in a breakwater.

THE COMMITTEE'S RECOMMENDATION.

7. The Committee very carefully examined the wall in progress, and the sites of the other works proposed, and also visited the quarry at Crowdy Head, where the stone for the work is being obtained. From their inspection, and the examination of witnesses at Harrington, they are of opinion:—

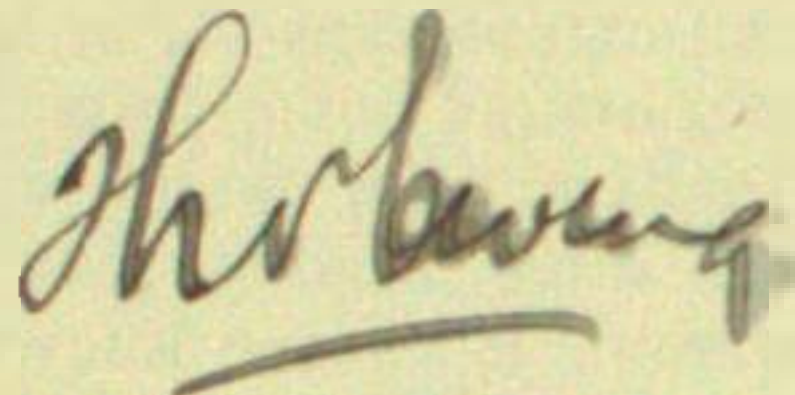
- (1) That the southern works should be commenced without delay, especially under the circumstances created by the construction of the northern training-wall.
- (2) That the northern wall above Harrington, as it is continued, may with advantage be reduced below the height proposed by the Department, and that its length may perhaps be curtailed.
- (3) That the space on the river side of the south sand-spit, between the site of the proposed rubble stone wall and the commencement of the south training bank, should be protected so that, instead of a gap existing between the two walls, they should be continuous.

With regard to reducing the length of the northern training-wall, it will probably be found, as the wall is continued westward from opposite Harrington, that the sand in the shallow portions of the river at this spot will be scoured away before the wall is extended to Chinaman's Point, which, according to the departmental design, is its western limit. The reduction in the length and height of this wall should considerably lessen the expenditure upon it, and a portion of the money so saved may advantageously be spent on the additional extent of rubble facing which the Committee consider should be placed on the river side of the south sand-spit.

RESOLUTION PASSED BY THE COMMITTEE.

8. The Committee have passed the following Resolution:—

"That, in the opinion of the Committee, it is expedient the proposed Harbour Works at Manning River, as referred to the Committee by the Legislative Assembly, be carried out, with such modifications as are suggested in their Report."



Chairman.

Office of the Parliamentary Standing Committee on Public Works,
Sydney, 30th June, 1893.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

MINUTES OF EVIDENCE.

HARBOUR WORKS AT MANNING RIVER.

TUESDAY, 22 MARCH, 1898.

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (VICE-CHAIRMAN).

THE HON. JAMES HOSKINS.

THE HON. WILLIAM JOSEPH TRICKETT.

THE HON. DANIEL O'CONNOR.

HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.

GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

FRANK FARNELL, Esq.

The Committee proceeded to consider the expediency of constructing Harbour Works at Manning River.

Robert R. P. Hickson, Under Secretary and Commissioner for Roads, Department of Public Works, sworn, and examined:—

1. *Vice-Chairman.*] Have you prepared a statement for the Committee in regard to the proposed work? Yes. I will first explain the two plans which have been furnished. The lower one is the plan submitted by Sir John Coode, which will be referred to in my statement. The upper one is the plan designed by the Department. The work done is shown in black, and the incomplete and complete schemes are shown in solid red and dotted lines respectively. The scheme recommended by the Department is that shown in solid red lines. The pink shading represents land which will be made by the sand thrown up by the sea.
2. *Mr. Trickett.*] The difference between your plan and that of Sir John Coode is chiefly that you have a training-bank on the northern side? Yes; and the wave-trap is omitted. Mr. Darley will explain why that has been done. My statement in regard to the work is as follows:—

R. R. P.
Hickson.
22 Mar., 1898

MANNING RIVER.

Ever since the year 1882 the Government has found it necessary, in order to maintain the navigation of the Manning, to expend large sums of money on dredging, the total sum so expended up to 31st December, 1897, amounting to £54,774. Of this sum about £14,470 has been spent at or near the entrance. While this work has given a measure of relief, it has always been felt that nothing short of the construction of walls and breakwaters for the training and concentration of the river currents could give satisfactory and permanent results. The Government, therefore, availed itself of the visit of the late Sir John Coode to the Colony in 1885 to obtain from him a report as to the nature of the works which, in his opinion, would best secure this end. For the purpose of enabling him to study the whole question, a careful survey of the river was made, and the necessary information as to rainfall, floods, prevailing winds, &c., obtained by Mr. Carleton in 1883, and the following particulars of the river are taken from his report:—

"The Manning River is connected with the South Pacific Ocean on the east coast of New South Wales by two mouths or entrances, called respectively the Harrington (north) and Farquhar (south) Inlets, distance about 8 miles apart, in latitudes 31° 51' and 31° 56' south, and longitudes 152° 42' 45" and 152° 31' 10" east. It flows through a thickly settled agricultural and pastoral district, embracing the southern portion of the county of Macquarie, and the north-eastern portion of the county of Gloucester. The low-lands through which the Manning runs are exceedingly fertile, particularly adapted for the growth of maize, sugar, and tobacco. A large quantity of timber, both cedar and hardwood, is exported from here, for the supply of which several steam saw-mills are working.

"The area of the Manning basin is about 3,170 square miles, and the principal tributaries which join the main river are the Barrington and Barnard, having a basin of 1,595 square miles; the Gloucester and Avon having a basin of 680 square miles; the Dawson and Lansdowne, with a few lesser streams, draining the remaining portion of 895 square miles.

"The rainfall of some portions of the Manning district was obtained, the average of which for the last five years is about 45 inches per annum.

H. R. P.
Hickson.

22 Mar., 1894.

"The following table gives particulars of the depths, widths, and sectional areas of river and height of floods."

Point of Observation.	Distance by river from Harrington entrance.	Soundings in channel along line of deepest water.	Mean width of river under ordinary conditions.	Highest flood level above low water.	Sectional area of river below low water.	Remarks.
	miles.	feet.	feet.	feet.	feet.	
Bungay Bungay Falls	33½	2 to 25	100 to 150	02	390	Highest point that can be reached by boat.
Blomfield's Bend	31½	6 to 14	240	56	1,370	Eighteen inches of water at ford.
Sullivan's Ford	31	6 to 16	—	—	—	A short length near Wingham punt has 2 feet only. Rise of tide here 2 ft. 6 in.
Wingham	29	5 to 22	300	52	4,290	
Devil's Elbow	27½	2 to 6½	250	42	3,650	Lower half of this reach dredged to 6½ feet.
Woolia Woolia Bend	26	9 to 29	620	30	—	
Tinonee	21	8 to 20	510	20	6,760	
Taroo	18	9 to 30	1170	20	10,600	Head of navigation for coasting steamers.
Cudde	14	10 to 34	330	16½	5,290	
Ghinni Ghinni Creek	10	20 to 36	2200, 2,000	0½	18,900	
Croki	8	10 to 35	560	0	14,350	
Mangrove Island	5	20 to 40	820	8½	15,400	
Chinamen's Point	3½	—	—	—	—	
Harrington Heads	½	Variable	620 (varies).	—	5,400	

With reference to the bar at the time of the survey, Mr. Carleton says:—

Owing to the heavy rains of last winter, and consequent freshes, the Harrington bar and inner crossing have about 8 feet upon them at present; but this is not always the case. Previous to the floods of last winter the bar was extremely shallow, and the coasting steamer drawing 7 feet was bar-bound fifty-nine days in one year. Changes, however, when they do come, are rapid, and the bar has been known to increase from 5 feet to 11 feet in one night. The position of the bar also ranges over a space of about half a mile, the headland being the northern limit; at present it is well to the north, and still working in that direction. The Harrington bar is considered one of, if not the most, dangerous one on our coast, as is shown from the number of wrecks and loss of life upon it. It has no protection from the east and south-east from which quarter the heaviest seas come. The headland, in the case of the Harrington bar, is situated on the north side, and affords no shelter even from north-easterly weather, as it is about half-a-mile inside the bar. The bar itself is constantly changing its position, and although the present channel is straight and comparatively deep, at other times it is exceedingly tortuous. Only last year (1884) the channel had two bends in it of over 90 degrees, and a considerable portion of it ran parallel to and directly in the outer break. Sailing vessels rarely attempt to cross the bar without the assistance of a tug, for which purpose a boat is subsidized by the Government. The coast chart shows the entrance is situated at the northern extremity of a large light, consequently the heaviest seas on the Manning bar are those produced by the south and south-west winds, which winds are the most frequent. It will be seen from the large plan that the further the entrance works northward, the more difficult it becomes for vessels to cross the bar when the wind is from the south and south-west; and at present a vessel coming in on the port tack can barely reach inside the break before she is obliged to go about or run the risk of being driven on the north beach; and masters of vessels arriving at the entrance in south-westerly weather, prefer to drive their vessels over the south spit at high water rather than enter by the present channel, which brings them too close to the north beach.

On 15th July, 1889, Sir John Coode forwarded his report, in which he recommended the construction of training-walls and breakwaters, as follows:—

South Breakwater.—A rubble mound, commencing at the eastern termination of the south sandspit, and extending therefrom for a length of 4,000 feet, the inner portion being curved, and the outer length carried on a straight line, running in an east-south-east direction.

North Training-bank.—A low rubble bank, commencing from the rocky ledge under Flagstaff Hill, and extending thence on a curved line 2,300 feet.

Barrier Bank.—A rubble bank, about 4 feet above high water, extending from the root of the south breakwater in a southerly direction about 5,200 feet, to prevent the erosion of the south spit and the outflanking of the new works by the discharge of flood-waters.

Rubble Facing.—Rubble facing, a length of about 1,500 feet of the river-bank at the root of the South Spit.

North Breakwater.—A rubble mound 2,200 feet long, seaward and curved, and finishing with a straight length almost parallel to the south breakwater, the opening between the two works being 800 feet. This width, Sir John Coode believed "would be sufficient for the discharge of flood-waters without creating a gorge, especially bearing in mind that it is not proposed, at all events in the first instance, to close Farquhar Inlet."

The effect of the proposed works when completed would be to form an entrance to the Manning, having a depth of not less than 12 feet at low water, or 16 feet at high water of spring tides.

The estimated cost of the works was as follows:—

South Breakwater	length, 4,000 feet	£116,200
North Training Bank	2,300	7,400
Barrier Bank to South Spit	5,200	8,630
North Breakwater	2,200	57,700
Leading lights, buoying and lighting channel .....	.....	2,000
		£194,000
	Say	£194,000

On several occasions, subsequent to the receipt of Sir John Coode's report, the residents of the towns of Taroo, Wingham, Cudde towns, Cooperbrook, Tinonee and Croki, petitioned the Government to take some steps towards improving the entrance. It was represented that for many years past, owing to the treacherous state of the bar, the people of the district had suffered great loss and inconvenience; connection with the metropolis had been uncertain, and the casualties to shipping had been so numerous that in order to make trade profitable, steamship-owners had been forced to charge almost prohibitive rates of freight. It was estimated that £80,000 would not cover the losses at the bar during the past twenty years, and in 1893 alone, they had reached £10,000. In May, 1894, the Minister requested the Engineer-in-Chief "to report, as soon as possible, whether any work, at a comparatively small cost, could be carried out which would be of material benefit to this entrance, say, perhaps the North Training-wall; if so, it might be desirable to do this work at once." Mr. Darley thereupon had an estimate prepared of the probable cost of opening up a quarry at Crowdy Head, constructing a tramway thereto, providing plant, tools, &c., and constructing the North Training-bank, and found that the work could not be carried out for less than £20,000. He suggested, however, testing the market by preparing a specification which could be drawn up to provide for the contractor finding the stone, either by bringing it down the river or from Crowdy Head or any other

other sources he might find available; the contractor to provide all plant, &c., and complete the work at a price per ton. Tenders were thereupon invited, the estimated cost being put down at £16,000. The lowest tender was at a rate of 3s. 8d. per ton, and a vote of £17,000 having been taken on the Loan Estimates, this tender was accepted for the construction of the north training wall on 20th December, 1894, and the work is still in progress.

R. R. P.
Hickson.

21 Mar., 1898.

On 31st January, 1896, after visiting the works, I reported as follows:—"When visiting the Manning River a few days ago my attention was called to the large amount of scour that had taken place at the end of the outside training wall, the result of which was that instead of having to tip the stone into about 6 feet of water, as shown on plan, we are now tipping into something like 14 feet, with every prospect of this depth increasing."

It is manifest that this must at once be put a stop to, otherwise our money will be spent long before we get to the end of the proposed work. To meet this I have had a conference with the contractor, with a view of having stones placed from a punt in front of the work, so as to secure the bottom from scour. After going carefully into the cost of the work, the contractor writes, offering to deposit the stuff from a punt supplied by the Department at a rate of 5s. per ton (the contract rate for tipping it in the ordinary way at the end of wall being 3s. 8d.). This price I considered too high, and have arranged with him, subject to the Minister's approval, to allow him 4s. 6d. per ton, on condition that he takes the responsibility and care of the punt.

I think this is the most economical arrangement that can be made, and would request the Minister's approval thereto.

A contract at the rate of 4s. 6d. was thereupon entered into, and a total of 10,302 tons had been deposited at a cost of £2,318.

During 1895, serious erosions of the foreshore of Harrington having taken place, and some works being necessary to confine the waters to one channel, it was deemed advisable to construct a training-wall, extending up stream from the "Painted Rocks," and nearly parallel with the Southern Barrier Bank. At present the waters divide on a sandpit, the upper end of which is about three quarters of a mile above Harrington, portion flowing along the north-western shore, and the remainder along the outer side of the spit; a very large amount of dredging has always been found necessary at the crossing between the two channels, the results of which have only been temporary. The wall, when completed, will have the effect of directing the whole of the river waters into the outer channel, where the increased scour may be expected to maintain a navigable depth without the aid of dredging. The material being used in this wall is the smaller stone from the Crowdy Head Quarry, and which, owing to the more exposed position, would be unsuitable for the north training-wall, and would otherwise have had to be run to spoil. The length of this wall constructed to 31st December, 1897, was 1,287 feet, at a rate of 2s. 5d. per ton, the total cost being £6,659.

The votes taken for the harbour works have been as follows:—

1894 Loans	£17,000
1896	10,000
1897	15,000
Total	£42,000
Total expenditure to 31st December, 1897	23,020
Balance at 31st December, 1897	£18,980

As soon as Mr. Young ascertained that the expenditure was exceeding the £20,000 limit, he instructed Mr. Darley to submit to him a scheme for the improvement of the entrance with a view of placing the same before the Public Works Committee.

Mr. Darley's scheme, which is now presented for the consideration of the Committee, consists of two breakwaters, 800 feet apart, at the north and south sides of the entrance respectively, and the continuation of the walls at a lower level up stream to confine and train the river waters, also facing of stone to portions of the river bank to prevent erosion.

The scheme is to some extent similar to that proposed by Sir John Coode, the difference being the addition of the river wall extending up stream from the inner side of the North Training-wall, and the omission of the wave basin at the northern side of the entrance.

The total length of breakwaters, training walls, etc., in this scheme is about 23,000 feet, and the estimated cost £222,500. Mr. Darley, however, thinks for the present this scheme might be modified by reducing the total length of breakwaters and training walls to a little over 19,000 feet, at an estimated cost of about £180,000. This is in addition to the work already done, which, as before mentioned, cost £23,000.

On the completion of this modified scheme, the depth of water at the entrance should be ample for all vessels likely to use the port for many years to come.

3. Upon the completion of the scheme recommended by the Department the depth of the water should be enough for all vessels likely to use the port for many years to come? Yes.
4. What will the depth be? About 12 feet.
5. And what would be the draught of vessels generally trading to the port? About 7 feet.
6. Would they be good large steamers? Not very large steamers; they are fairly comfortable boats.
7. A vessel drawing 12 feet would run up to fully 600 or 700 tons? Yes.
8. That I suppose would be as large a vessel as would be likely to trade at the port? It would be quite large enough I should say for the trade of the place.
9. *Mr. Wright.*] The "Électra," I suppose, would be about the type of vessel? Yes.
10. *Mr. Trickett.*] How is it that money has been so freely voted for this work. It would appear that £16,900 has been voted in excess of what has been expended. Apparently, in 1897, £15,000 were voted, when you clearly had some money in hand? We had some money in hand, but it was considered advisable to make arrangements then for a further grant, so that the work could be continued without any block. Of course, works like these cannot be stopped; they must go on.
11. It must have been known all along that this was a work, the total cost of which would exceed £20,000;—why then was it not submitted to the Committee before? The first approval for the northern piece of work was expected to involve an outlay of about £17,000. But when Mr. Young found that the £20,000 was being exceeded, he desired that a scheme should be submitted to the Committee, and this scheme is the result.
12. But the scheme does not appear to have been submitted until £27,000 had been voted? As you are probably aware, money is often voted before a work has been approved. It does not follow from the mere voting of the money that it must be spent.
13. You say that the £17,000 was the first estimate? Yes.
14. I cannot understand why £17,000 was voted in 1894, and apparently another sum of £10,000 in 1896. When that £10,000 was put upon the Estimates it must have been clearly seen that the expenditure upon the work was in excess of £20,000. Why was not the work referred to the Committee, in 1896, when the £10,000 was voted? The Minister sent the work to the Committee as soon as he could, having regard to the other work we had in hand at the time.
15. I do not ask you to explain the action of the Minister, but £17,000 was voted in 1894, and in 1896 £10,000 more was required, making a total of £27,000. The Committee do not hear anything of the work until the end of 1897? That is as soon as it could be sent on.
16. I suppose you cannot explain the matter? Not beyond what I have already said.

17.

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17. You say in your statement that the materials used in one of the walls was the small stone from the Crowdy Head Quarry which would be unsuitable for the northern training-wall. Why is that? It was too small. That quarry, like all quarries, gives a certain amount of large stone and a certain amount of small. The small stone would have to be thrown to spoil or waste if it were not put into that wall.
18. What character of stone would you require for the northern breakwater? The large stone we are now getting from the Crowdy Head Quarry.
19. What size would the stones be? They would run to about 4 or 5 tons—something like that.
20. The northern training-wall would be in a very exposed position? The northern breakwater will be, but the northern training-wall will not be.
21. Then why do you want such very big stuff for the northern training-wall? We are putting small stuff into the northern training-wall, and the larger stuff into the northern breakwater. The stone is brought down to a jetty near the Painted Rocks, and it is there divided. The small stuff goes up the river and the large stuff goes down.
22. How is it done? By tip-waggons or a tramway.
23. The marked difference between the Departmental scheme and Sir John Coode's scheme appears to be that the Department extends the northern training-wall so as to narrow the stream very much, and to prevent the water from getting behind the sand-banks and islands that are shown on the plan? Yes.
24. Thereby intensifying the scour, and making the stream more rapid? Yes.
25. I suppose that is a principle that has been proved to be the most efficacious in dealing with works of this kind—that is to make the stream as narrow as possible, and thus get a rapid scour? Yes.
26. Does Sir John Coode in his report give any reason for leaving the northern part so wide, and having such a tortuous course, as is shown on his plan? I think he does; but I really should not like to say unless I had his report to refer to.
27. Looking at the two schemes, the Departmental scheme seems to convince one as being far the better? I think so.
28. One can hardly understand a man like Sir John Coode leaving the northern portion of the stream to twist about among sand-banks unless there were some good reason for it? I think he was considering more the entrance across the bar than the navigation after vessels got in; but there can be no doubt that the weak feature in his scheme is allowing the channel to divide into the two branches.
29. Your experience at the Tweed works shows that the narrower the limits within which the water is confined the greater the scour and the greater the depth obtained? Yes; but there is always a limit. You must leave room enough for the flood waters to get out.
30. What has been the result of the works carried out so far at the entrance of the Manning? There have been very good results so far as the work itself is concerned, but of course, as yet, it has had no effect on the bar.
31. Will you point out where the bar is? It is just about half a mile to seaward of the Painted Rocks.
32. What is the depth of the water indicated on the bar there? The last information we had a few days ago, I think, was that there were 7 feet of water.
33. That, of course, is an insufficient depth for either steamships or sailing vessels entering the river? Yes.
34. I suppose very great inconvenience is caused by that low depth of water? Yes; I cannot tell you the number of times vessels have been stopped.
35. In your report you say that during 1895 there were serious erosions of the foreshore of the Harrington Inlet;—will you explain that matter a little more fully? That would be right up in the bend.
36. The erosion to which you referred in your report occurred on the northern side of the present channel and to the north of where it is proposed by the Departmental scheme to construct the northern training-wall? Yes.
37. Has that erosion affected the water by shallowing it there? It has affected it by shallowing it, but the worst effect has been that it has made the channel more tortuous than it was before. It has made the bend more difficult to get round.
38. I suppose that where the erosion occurred there was merely soft beach sand? Yes.
39. With regard to the construction of the training-wall, do you think that the stones you are about to put there will find an easy bottom, or that they will keep sinking down through the sand? I think they will find an easy bottom.
40. Is any work being carried on at the Manning at the present time? The work of the northern training-wall and the northern breakwater is going on now.
41. Under contract? Yes.
42. What is the amount of the contract? It is so much per ton deposited—2s. 5d. for the upper portion and 3s. 8d. a ton for the other portion.
43. So far as the work has been carried out, does it give any appearance of being permanent? Quite.
44. Looking at the map, it would seem as if the bend in the northern training-wall would have to meet a considerable force of water in the river? No doubt it will. There will be a deep channel along there.
45. The work so far constructed is standing well? Yes.
46. Have there been any heavy floods in the river since the works were undertaken? Not a very heavy flood, nothing more than ordinary freshes.
47. Where was the point that you found you were tipping stone into 14 or 15 feet of water? I could only describe it as being just opposite the letter "K" in the word "Bank."
48. How did you obviate that? By coating the bottom with stones ahead of the tip. With reference to the statement in my report as to the tipping of stone into 6 feet of water instead of 14 feet of water, I might explain that when tipping is done on to a sandy bottom there is at the tip end a current, the effect of which is to excavate the sand immediately in front of the tip. In this case instead of tipping the stone into the water that we expected to find—namely, about 6 feet—we found that we were really tipping it into 14 feet. To prevent this the Minister approved of the bottom in front of the tip-head being coated with stone, in that way putting an end to the scour, and the tipping going on as usual on the top of the stone.
49. I understand that Mr. Darley has now reduced the probable cost of what he thinks will be the necessary work at the Manning to about £100,000? Yes.
50. In addition to the £23,000 already expended? Yes.
51. Have you a pretty good reason to suppose that the work could be carried out for that amount? I think so; but Mr. Darley will be able to give you particulars showing how he made out his estimate.

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52. Will you point out on the map where the North Head really is? The North Head is really to the east of the Painted Rocks, the land between there and the entrance being a large sandbank.
53. The sand bank at the entrance or bar is frequently changing? Yes.
54. Does it change with regard to locality or depth? In regard to both locality and depth.
55. How does the Department manage in regard to giving the necessary information?—is there a harbour? There is a pilot at Harrington, and he signals to vessels which direction they are to take.
56. I suppose this is really one of the most dangerous entrances on the coast? I think it is about the most dangerous.
57. On account of exposure to the south and south-west winds, and also on account of the changing character of the bar? Yes.
58. I suppose you are not prepared to give us any opinion with regard to the two schemes—that is, the railway extension from Maitland to Taree and the construction of the harbour works;—will you express an opinion as to whether both or either should be carried out? I am not prepared to give an opinion upon that point; it is a matter of policy.
59. Looking at the work as the head of the Department, and as a professional man, do you recommend it as necessary to make the entrance suitable for the purposes of the district? I do. I cannot imagine anything competing with water carriage. No matter what other accommodation is given, I am quite sure that the river will have to be kept navigable.
60. It is a great waterway when once you get inside? Yes.
61. And some work of this kind is absolutely necessary for the purpose of rendering it suitable for modern navigation? Yes.
62. As far as you know the district, whatever other means of communication are provided there will always be an agitation or necessity for this port to be kept clear? Yes.
63. Is it not the general experience of the world that waterways and rivers are maintained as against all other means of communication? Yes.
64. And as between the two schemes—the one submitted by Sir John Coode and the more modern one now submitted by the Public Works Department—have you any difficulty in saying of which you would approve? I have no hesitation in saying that the scheme now submitted by the Department is far the better of the two.
65. You think the omission in the scheme of Sir John Coode in not providing for a training-wall to the eastward of the sand bank is one which should now be remedied if the work is carried out? Yes.
66. *Mr. Clarke.*] An amount of £17,000 was expended upon this work in 1894? It was voted in 1894.
67. Was a contract taken for that work? Yes; it is all contract work.
68. Is it not a fact that day-labour has recently been employed upon the work? Not upon the Manning River. There has been only one contract there, and it is still going on.
69. Is the original vote of £17,000 not yet expended? The contract was not for a lump sum, it was at so much a ton.
70. *Mr. Lee.*] Have you any suggestion to make by which port dues could be imposed upon this or any of the other northern rivers, with a view to obtaining a revenue? I have not. I think you would want special legislation to deal with the matter.
71. I am asking the question in a general way, because there are so many proposals before the Committee for the improvement of our northern rivers, and it would appear to be a fitting time to inquire whether it would be possible to impose port dues to provide a revenue to cover the interest on the cost of construction or the cost of maintenance? I think there would be great difficulty in doing that.
72. There is no scheme in the office at the present time? No.
73. So far as our ordinary navigation laws are concerned, without further legislation the dues could not be imposed? No.
74. The class of vessels trading to the port are colonial vessels from the port of Sydney, and the fact of their being registered there would give them the right of entry into the whole of these rivers? Yes.
75. You have made a statement as to the losses upon the bar of this river;—they appear to have been very heavy. I suppose the figures have been obtained from accurate source? They are only quotations from depositions which have waited upon the Minister. I do not hold myself responsible for their accuracy.
76. Will the carrying out of these works at the entrance to the Manning involve any large expenditure higher up the river? No.
77. That is to say, if you afford an entrance for vessels of a certain size would it not necessitate heavy expenditure in deepening the river higher up? No.
78. You think the initial cost would be about the only cost? Yes; of course the Manning, like all other rivers, will have to be dredged from time to time, but no exceptional dredging will have to be carried out.
79. If the scheme is carried out in its entirety it will give from 12 to 14 feet of water? About 12 feet I should say.
80. And the scour would be so maintained that there would be a permanent entrance for vessels drawing 9 feet of water? Yes.
81. The question arises whether these vessels will not require to get higher up the river to distribute their cargo. Do you not think that the effect of deepening the entrance will be to necessitate the deepening of the river higher up? I think not.
82. *Mr. Black.*] Sir John Coode in one part of his report states that one of the effects of closing the Farquhar Inlet might possibly be to create a gorge at the Harrington entrance. Does that mean that instead of keeping the whole width between the two breakwaters, the force of water would carry away the sand in the centre and create a very deep passage there while perhaps silting up the sides? I think that what Sir John Coode intended was, that it would probably create such a deep gorge at the Harrington entrance as would eventually pull the breakwater down on each side.
83. You mean that the walls would be undermined? I fancy that is what he meant.
84. Mr. Carleton says that the changes in the bar are rapid, and that it has been known to increase from 5 feet to 11 feet in one night. Does he mean that where there were 5 feet of water over it at one time, a little later there would be 11 feet of water over it, or *vice versa*? Yes.
85. His statement would appear to be based upon the fact that the headland on the northern side affords no shelter even from north-easterly weather; would the proposed breakwater afford such a shelter from north-easterly weather as is not afforded by the headland? Yes.

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86. Is it perfectly certain that the position of the breakwater would be such that the bar would not form outside of it as it now does outside of the headland? Not if the breakwaters are put out sufficiently far.
87. What is the reason then for the statement that the position of the headland is such that it leads to the formation of a bar outside of its protective limits? Because the headland is not near the entrance, it is about half a mile in from the entrance.
88. You propose to close the northern channel with a training-wall? Yes.
89. Will that interfere with the township of Harrington at all? It is not a very big place. I do not think there will be much trouble on that score.
90. You spoke about the tipping of stone at the end of the training-wall involving a scour, and that you were at one time tipping the stone into about 14 feet of water;—how do you account for that scour? It is what takes place at nearly every tip-end on a sandy bottom, if there is a strong stream running alongside.
91. It means that instead of gradually building up the breakwater to the height of the specification, you lay a bed for it first? Yes.
92. *Mr. Wright.*] Upon page 7 of your report you speak of the stone you put into the water to prevent the erosion of the banks. I see the training-wall itself cost 3s. 8d. per ton, and the other stone put in cost 4s. 6d. a ton; how do you account for such a big difference? The stone in the one case is loaded at the quarry into the tip-trucks, and is tipped direct into its place. In the other case it is loaded at the quarry into a tip-truck, and the truck is tipped into a barge, which is towed out to the front of the tip-end; hence the enhanced cost.
93. *Vice-Chairman.*] Where did the first expenditure take place when it was proposed to proceed with the training banks? From the Painted Rocks.
94. What work did you expect to accomplish by that expenditure? A deepwater channel—to divert the channel from the northern side to the southern side, and to get a better crossing. There is a very bad crossing as soon as you get inside the entrance, and the idea was to divert the current and make it a good one, allowing vessels to make use of the southern channel.
95. Was that part of the original scheme of Sir John Coode? The part from the Painted Rocks seaward formed part of it, but Sir John Coode did not propose anything from the Painted Rocks up the river.
96. Where do you propose to start the breakwater from? It is a continuation of the work we are now on.
97. The training-bank merges into the breakwater? Yes; we call it the breakwater from the Painted Rocks seaward, and the training-wall from the Painted Rocks up the river.
98. What was the reason for attempting to carry out a work of such magnitude for such a small sum as £17,000? *Mr. Darley* will explain that matter to you. He thought he would get a fair result for the expenditure.
99. He thought an expenditure of £17,000 would be enough to give a permanent channel? Not over the bar; but he thought it would improve that part of the river which was perhaps the most difficult for vessels after they got inside the bar.
100. Have you formed any opinion as to what the effect of the northern portion of the work will be? I believe it will give a very good channel alongside; but it would be absolutely necessary to make the southern wall for the protection of vessels using the channel. I do not think the northern wall of itself would be sufficient.
101. Will the northern training-wall or breakwater stand without the protection of the southern wall? Yes.
102. What protection is there now? There is none just at present. That is the difficulty of getting in and out.
103. Is the object of the southern training-bank and breakwater to afford protection to steamers entering and leaving the channel? Yes; and to assist in making the scour by throttling the entrance.
104. How do you explain the difference in the length of the training-wall and breakwater described in Sir John Coode's scheme, and that proposed in the scheme now under consideration? By the addition of the northern training-wall.

WEDNESDAY, 23 MARCH, 1898.

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (VICE-CHAIRMAN).

The Hon. JAMES HOSKINS.

The Hon. WILLIAM JOSEPH TRICKETT.

The Hon. DANIEL O'CONNOR.

HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.

GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

FRANK FARNELL, Esq.

The Committee further considered the proposed Harbour Works at Manning River.

Cecil West Darley, Engineer-in-Chief for Public Works, Department of Public Works, sworn, and examined:—

- C. W. Darley. 105. *Mr. Clarke.*] Have you anything to add to the statement laid before us yesterday by the Under Secretary for Public Works? I might give an explanation in regard to the works. As set forth in the statement laid before the Committee, Sir John Coode was asked to report upon the improvement of the river, and his scheme embraced a short length of the northern training-wall now proposed, with a wave-trap, and the northern breakwater; on the southern side the training-wall and south breakwater, together with a certain amount of rubble work for the protection of the river-banks at the weak point. The navigation of the river being bad, the Minister asked me whether a portion of the scheme might not be carried out for its improvement, and whether we might not commence by making portion of the northern training-bank. I reported that to open this quarry and construct a tram-line for heavy stone would cost a sum exceeding £20,000; but suggested that tenders might be invited for a schedule contract, leaving it to the contractors to either open the quarry at Crowdy Head and lay a tram-line, or open a quarry up the river and bring stone down in punts. The Minister decided to call for tenders for a schedule contract, which might terminate at any time; and the north training-wall, as shown upon Sir John Coode's scheme, has practically been completed; but I saw the necessity for dealing with the harbour so as to direct the current along the training-wall. The current strikes the south bank and reacts, dividing on a sand spit, the strongest portion

portion of the current striking towards the north, and making along the coast in front of the township of Harrington, and so out over the bar. A great deal of money has been expended at different times dredging that portion of the river. The northern half of the channel always tends to maintain its depth best, but a certain amount of dredging from time to time has had to be carried out in order to keep the channel open opposite the sand-spit. Sir John Coode recommended that we should discontinue dredging and allow that channel to close, thus keeping open the straighter and more direct channel. Nature, however, would not altogether allow us to close it. It seemed always inclined to keep open, and while the two channels were open it seemed that we should never have a satisfactory channel. The more I studied the question, the more I saw the necessity for taking the river out of the northern bight altogether; and I am now more than ever convinced that nothing will tend to maintain deep water in the river more than a properly-constructed north training-wall. I believe it will do more immediate good than even the breakwater will do. The river will cling to it, and will sweep round the training-wall, as shown on my revised scheme—the scheme now put before the Committee. You will see that it is proposed by that scheme to carry the training-wall from the Painted Rocks, which formed the starting point of Sir John Coode's wall, and to go westward from the same point, following round to the point on the north side of the main river, indicated upon the plan. The river strikes on the south bank, and reacts towards the northern training-wall, and it follows that wall out over the bar. Until the wall I have described is constructed, I think it is hopeless to get one leading channel over the bar. We have employed a sand-pump dredge to improve the main channel, and to pump silt between the opening in the sand-spits, which the current is always inclined to follow. The last flood, acting as it has always done, carried it away. We had a barrier bank there, and while that existed the main river tended to improve. When the flood came down, however, it burst through it again, and until we get that barrier bank constructed it will be hopeless to try to maintain a good crossing inside. The Manning, even when the bar has been fairly passable, has had the disadvantage of this inner crossing. In the scheme which I placed before the Minister I proposed to do away with the wave-trap. In the case of this particular river there is no necessity whatever for it. It means an extra length of breakwater, and a more costly work to construct. This is not a case where we want shipping to lie close inside the entrance. The object of a wave-trap in the Newcastle harbour was to enable shipping to lie both north and south close inside the entrance. You, therefore, wanted still water. In this case, if a wave struck on the breakwater it would run along it, and do no harm. There was, therefore, no object in going to the expense of constructing a wave-trap, which would complicate construction and serve no good purpose. I proposed to do away with the wave-trap, therefore, and to continue on towards the breakwater with the training-wall. By this means we shall get a direct current on to the bar. An important feature in the scheme is a further training-wall on the south side. I have left it just as Sir John Coode has shown it in his scheme; but I think that if the work is carried out it is very likely that what is shown as rough rubble facing on that side will have to be joined on to the barrier bank. It is a weak point. We must take care that the river does not break through that narrow neck. It might break through to the east or west of it, and it is very possible that we may have to protect the whole frontage up as far as the Mangrove Creek on the one side, and down to the barrier bank on the other. However, that is not an expensive item. I dare say for £2,000 or £3,000 we could do the whole thing.

106. What work has already been done in connection with the northern training-wall? The total length is 3,287 feet. Nothing has been done beyond the portion marked black on the plan. We propose to carry out the portion marked in solid red lines, but not at present. The work I propose not to have carried out is shown by the dotted red lines, north and south.

107. You propose to go westward with the training-wall a certain distance? Yes; I propose to extend the northern training-wall a considerable distance westward.

108. What would be the total length of the training-wall? The total length would be about 10,300 feet; the quantity of work still remaining to be done is 8,993 feet.

109. £100,000 is to be expended in addition to the amount already expended? Yes. The western extension of the northern training-wall, 8,993 feet, will cost £24,307 10s. To run the wall to the point where Sir John Coode proposed to run it—a further 50 feet—will cost £483 15s. The carrying out of the breakwater to the point to which I propose to take it—900 feet—will cost £18,652 10s. The proposed expenditure upon the north side is £43,443 15s. On the south side there is rubble facing, 1,500 feet, costing £1,530; a barrier bank, 5,200 feet, costing £13,950; and the south breakwater, as far as it is shown in the solid red lines, that is 2,600 feet, costing £36,162 10s. The total expenditure upon the south side will be £51,642 10s. The two sides together will involve an expenditure of £95,086 5s.; for supervision, I have allowed £4,713 15s., making a total expenditure of £99,800.

110. That is the total expenditure proposed at present? Yes; independently of the amount already expended.

111. Do you think that amount would be quite sufficient to carry out the work both on the north and south side, according to your plan? I should consider it quite sufficient to carry out the improvements at present required at the entrance of the river.

112. I notice that there are no headlands—that there is merely sand on both sides of the opening? The Manning River has no headlands. It really discharges in a bight. The nearest headland is 4 miles to the north at Crowdy Head.

113. If there were headlands, I suppose the proposed works would be cheaper? The sand-banks make the approach to the river more difficult. It is at present a shifting entrance.

114. It has always been a difficult river to enter? Yes; it is very changeable.

115. It is only in recent years that it has been navigated by small vessels drawing 6 or 7 feet of water? I believe it has been navigated occasionally by vessels drawing 8 or 10 feet.

116. What depth of water have you at the entrance at the present time? There are 10 feet on the bar at the present. It shoaled up to 9 feet in January last, but during the last two months it has been 10 feet. It has been as deep as 12 feet, but only for a short time. In June of last year it was 7 feet, and in April of last year there were only 5 ft. 8 in. of water on the bar. It is constantly changing. Lately it has been pretty fair.

117. Are the measurements you have given high or low water measurements? On the day on which 10 feet of water were reported, that would be the 10th March, there was a range of 3 ft. 3 in. of tide. At low water there would be only about 7 feet on the bar.

C. W. Darley. 118. As a rule, there is not anything like 10 feet on the bar at the present time? Only at high water. In April last the navigation of the river was practically closed—nothing but a rowing boat could get in and out. On the 24th May the entrance was practically dry, there being only 1 foot 6 inches across the entrance.

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119. How do you account for there being so much water there now as compared with ordinary times? At this time last year there were about 9 feet. We are approaching winter, and in the winter time the bar has a tendency to shoal up. We have had a fresh lately, and it scoured the bar out a little. It has helped to improve it slightly.

120. Do I understand you to say that with westerly winds the bar has a tendency to shoal? It seems to shoal up during the winter months.

121. Is that usual in our coastal harbours? Last winter happened to be a dry winter. We had not so much rain as we usually have. I think the shoaling is due to that more than to anything else. But the changes are very rapid indeed.

122. If the proposed improvements were carried out what depth of water would you expect to get at the entrance at high water? There would be no difficulty in obtaining 15 feet of water on the bar.

123. Giving you from 9 to 10 feet at low water? Yes, but I think the channel would be deeper than that when it was properly confined.

124. You think there is sufficient justification for expending the amount proposed, namely, £100,000? The district is a good one, and there is a good deal of land there which could be occupied, and which probably would be occupied if people had proper means of getting their produce to market. I think the district is worth a large expenditure.

125. The proposed expenditure would enable vessels of a larger class to enter the river? Yes; and to carry produce at a cheaper rate.

126. That must be a considerable benefit to residents of the district? Yes.

127. *Mr. Lee.*] Sir John Coode's proposal appears to have provided for a north training-wall, starting from the shore and running straight across the sand-spit on the north side to the breakwater? Yes.

128. He proposed apparently to have a training-wall for a certain distance, merging into the breakwater? Yes; the training-wall was to carry a tramway.

129. At the present time, in heavy weather, I suppose the surf breaks over the sand-spit? Yes.

130. Sir John Coode did not propose to erect a barrier to the moving of the sand at that point? No; the object was to get access to the breakwater. It would not matter how much the sand moved in that position.

131. Would it not appear that the object of Sir John Coode was to prevent the sand from coming in? No; the object was to get to the breakwater.

132. Do you attach any importance to that sand-spit being covered at high water and in heavy weather? No.

133. Would your training-wall at that stage be above high-water mark? It would be 4 feet above it. We are commencing to rise higher there.

134. That would be an effectual barrier to any sand which might otherwise come in from the northern side? Yes.

135. Did Sir John Coode's breakwater go further out than you propose to take your breakwater? My breakwater agrees with Sir John Coode's breakwater exactly, but I do not propose to carry out the whole work at present. The extreme points of the breakwaters in both schemes correspond exactly. I do not propose to carry out more than half the breakwater at present. I should like to construct a portion and see what the effect will be. I adhere strictly to Sir John Coode's breakwaters as regards their position, but I have done away with the wave-trap saving some 1,000 feet of stone wall.

136. Do you not propose a curve in your northern training-wall admitting of a proper discharge on that side which could not, apparently, happen under Sir John Coode's proposal? Yes; I attach the utmost importance to the northern training-bank. Even if it were constructed without the southern training-bank, I think it would tend greatly to fix and maintain the entrance. At the same time, the bank on the other side should be constructed.

137. You are convinced from your experience that it would be of little use to put down one training-wall; you think there must be two to set up the scour? You really want two.

138. You think the breakwater if carried out to the distance you propose will give sufficient relief? Yes; and we shall then be able to see whether the increased traffic would warrant a further expenditure.

139. If it is afterwards found necessary to extend the breakwater further it will not involve a greater proportionate cost? No.

140. The remainder of the scheme can at any time be carried out without in any way jeopardising the efficiency of the work? Quite so.

141. As to the inner training-walls, I suppose they are all above high water, and also above flood waters? Yes. The flood waters at the entrance do not really rise higher than high water.

141½. According to the map, the worst water appears to be from the bar up to the western end of the proposed southern training-wall? Yes.

142. Consequently that is the difficult portion you have to deal with? Yes.

143. It is where you want to keep up your scour? Yes.

144. Above that the sand increases until you get off the mouth of Mangrove Creek? Yes.

145. Scott's Creek opens into the Farquhar Inlet? Yes.

146. How far is Scott's Creek from the entrance? Nine miles. The creek runs on each side of Oxley Island. The distance up the western entrance to Harrington is 14 miles.

147. Up to the junction of Scott's Creek there is good water? Yes.

148. If you confine the flood waters to the narrow space you propose to do, will they not have a tendency to make their way through Scott's Creek and discharge at the Farquhar Inlet? A large portion of the flood waters escape by Scott's Creek as matters stand.

149. At the present moment there is a large surface over which shallow flood waters spread;—if you confine them within the narrow channel you propose, will you not create a tendency for them to break through somewhere else? No; if the channel is open it will give a better discharge than you have had hitherto.

150. You view the narrow strip where the rubble stone facing is shown as a dangerous place? Yes; if the river goes through there it might be difficult to get it back again. I think it might be necessary, as I have

have already explained, to extend the rubble facing from the southern breakwater or southern training-wall practically to Mangrove Creek. It would not be a very costly matter. C. W. Darley.

151. You adhere, I presume, strongly to the principle that the completion of these works will increase the volume of the discharge? It will give a more direct and better discharge; it will be deeper and wider than it is at present. 23 Mar., 1898.

152. If it were not so there would be a tendency for the flood waters to break through or to back up and inundate the land above? Yes; I have fully considered all those points. If the channel I point out is cleared it will be a much better discharging channel than it is at the present time.

153. Admitting that the carrying out of the work will give a depth sufficient for any steamer to carry away the produce of the district, will the work involve the country in any considerable cost on account of dredging the river in order to meet the circumstances of the increased traffic by larger boats? There are certain places where the river needs improvement, but I regard the improvement of a river of this kind very much in the light of the improvement of a public road. I regard the dredging of a river as being in the same category as the maintenance of a road. In any case it will only be a question of dredging a few shallow spots, in order to enable the larger steamers to go up.

154. That will not involve the country in any very large expense? Not in any serious expense. It depends, of course, upon how far you want to take the steamers up. If you are going to take the large steamers up as far as Taree, there will not be much to dredge. Taree is a distance of $18\frac{1}{2}$ miles. If you want to take the steamers up to Wingham the dredging will involve a heavy cost. I think we should be satisfied at present to get the steamers up as far as Taree, and allow the work of the upper portion of the river to be done by droghers. It would not cost very much to make from 12 to 15 feet of water up as far as Taree.

155. Have you appliances on the spot for the carrying out of these works? The work at present being done is under contract. If the whole work were authorised we should take the work off the contractor's hands, and probably carry it out by day-labour, or let a fresh contract. The present contract is not drawn in a way to admit of our getting large stone suitable for a breakwater. It is intended only for getting stone suitable for training walls. We can stop the contract, however, by a month's notice.

156. The plant in such works is, as a rule, a costly item? Yes.

157. Could the plant used upon the Manning be made available for any other places where similar works are being carried out? We move our plant to a great extent from port to port. When we have finished one work we generally move the plant on to another, and credit the work with the then value of the plant.

158. You are satisfied that you have in the neighbourhood abundance of stone for the proposed work? Yes; there is abundance at Crowdy Head. It would be conveyed to the works by tramway.

159. You have found that you had to take some precautions in putting in the northern training-wall, owing to the scour at the end;—did it increase the cost very much, and do you anticipate an increase of that cost? I think it is economy to line the bottom of the tip-head with stone.

160. What is the greatest depth of sand you have met with in that vicinity? It has scoured out to 28 or 29 feet.

161. That would prove that a great depth of water could be obtained? Almost any depth—it is all sand.

162. Do you not think you might find reefs or boulders which would upset your calculations? I do not think it is likely.

163. At the extreme end of your breakwater, about how many feet of water will there be, under normal conditions? Opposite the point of the breakwater, if it were completed, I should expect to see something like 20 feet. Between the breakwater and the crossing inside there should be from 15 to 18 feet. There would be about 25 feet between the actual points of the breakwaters. On the crossing inside there would be about 15 feet.

164. Would that be deep enough to spill the scour into? Yes.

165. Would the wind which now creates a bar when the works are completed, offer so much resistance as to cause a precipitation of sediment near the mouth of your entrance? No; the wind acting against the current might cause a choppy sea, but it will not stop the scour from taking place.

166. You do not anticipate from wind, current, or any other cause, that the sand will set up a bar outside of your breakwater? I do not think so.

167. What is the set of the current at that point? From north to south, wide of the bight; the current in the bight is not very strong, but what there is of it is southerly.

168. The tendency would be for the sand to drift to the south? Yes.

169. *Mr. Wright.*] The proposed breakwaters are situated in a bight? Yes.

170. What is the set of the ocean current there? The main current is wide of the shore. Inside, it still has the same set—southerly.

171. Your northern breakwater would be free of any accumulation of sand? Yes.

172. And the silt from the river would work down the coast? Yes.

173. Do you think it will become necessary to close the Farquhar Inlet? I do not see any immediate necessity for it. If we found we could not get enough scour we might entertain the proposal at a future date. It can never let out any great quantity of water, because Scott's Creek and the other openings there are comparatively narrow. It is an outlet for big floods.

174. You think it would serve a useful purpose? Yes. At the same time I should like to see it closed, but I would not go to the expense of closing it at the present time.

175. Do you think your breakwaters are taken out far enough to prevent an accumulation of sand on the bar? They are sufficient to confine the channel in one position. They will give a channel of sufficient depth over the bar.

176. You feel satisfied that you have extended the breakwaters far enough to admit of the carrying away of the sand-banks shown upon the plan? Yes.

177. You said you regarded rivers as occupying much the same position as do roads in the matter of maintenance;—I suppose it is necessary to dredge the whole of our rivers to a greater or less extent? Yes. We have dredges on all the rivers now.

178. If they are to be kept in a navigable state, dredging is an absolute necessity? Yes.

179. So that the dredging upon the Manning River would be only in keeping with the dredging upon other rivers? There would be no more dredging than we have been doing in the past.

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- C. W. Darley. 180. It has not been decided whether the proposed work is to be carried out by contract or day-labour? It has not yet been decided.
- 23 Mar., 1868. 181. Who settles the matter? I generally make a recommendation for the consideration of the Minister.
182. Have you heard that a number of men are assembling in the neighbourhood now with a view of entering upon these works? No; there is a contract already in existence.
183. What has been your experience upon works of this kind;—have you found it cheaper or more expensive to carry them out by contract or day-labour? In many cases it is cheaper to carry them out by day-labour, and it is far more satisfactory. Where there is a settled piece of work, where you have no doubt as to any change being required, it is, perhaps, better to carry out the work by contract.
184. Where no unforeseen contingencies are likely to crop up you prefer contracts? Yes; but in many cases there are unforeseen difficulties. It is especially in the case in harbour works, and immediately you ask the contractor to do anything which is not in his contract he wants an excess price. In works of this kind you must be prepared to meet difficulties day by day. You must have your hands free to meet unforeseen contingencies. There are works in which we find it a great advantage to proceed by contract.
185. Do you find that the men do as much work for the Government as they do for contractors? I think so. We pay the men well, and we also pick them.
186. You get a good class of workmen? Yes; and if they do not do the work they can go. If we were hampered, if we had to take certain men, and if we had not a free hand in sending them away if they were not doing their work, we should have to abandon the system, and do all the works by contract. But where the engineer has a free hand, where he can send a man away when he is not earning his money, I think the work can be done as cheaply and well by day-labour as by contract. We employ absolutely competent and experienced foremen who know what a man's work is worth, and if they report that a certain man is not earning his wages we let him go.
187. There is no political influence at work—it is a question of doing the work or clearing out? Yes.
188. You are getting all the stone for these works at Crowdy Head? Yes; there is no other suitable stone available.
189. All the stone used in the southern breakwater will require to be taken over in punts? Yes.
190. Would that add much to the cost? Yes; I have added one shilling to the price of the stone employed in the northern breakwater to meet the increased expense in the case of the southern breakwater.
191. How far is it your intention to line the bottom with stone ahead of the tip? Until we get up to the point where the river divides. When that point has been passed there ought to be no tendency for the current to run round our work.
192. I suppose you have made allowance for the extra cost of the material employed to prevent the scour to which you have referred? Yes.
193. You have made ample provision to meet all contingencies of that kind? Yes.
194. *Mr. Lee.*] How much will it cost to complete the breakwaters as far as the dotted red lines? The northern breakwater up to the end of the dotted portion will cost £23,602 10s., and will have a length of 1,100 feet; the southern breakwater will have a length of 1,400 feet, and will cost £54,257 10s., giving a total of £77,860. I have added to that £3,940 for supervision and plant, making a total expenditure of £81,800.
195. That is a contingency which the country may yet have to face? I think it is doubtful whether the work will be necessary.
196. If it should be necessary, the total cost of making the Manning River a good navigable river will have been a little over £200,000? Yes.
197. In your opinion, is the district of sufficient importance to justify the expenditure of nearly £250,000 of money upon the proposed harbour? I do not think that at the present time we are justified in expending more than £100,000; but on the other hand, if the entrance is improved, there will be a considerable increase of population in the district, and a larger expenditure may be justifiable hereafter.
198. There is a large area of valuable land about the Manning? There is a large area which has not yet been much cultivated.
199. *Mr. Huskiss.*] But if the works are carried out as you propose, do you consider that after they have been completed there will be exceptional difficulties in the way of steam vessels entering or leaving the Manning as compared with other rivers? No doubt there will be times in bad weather when it would not be safe to take it; but it would not last long, and it would only happen occasionally.
200. Do you consider the entrance to the Manning River more dangerous than that of any other river on the coast? At present, yes; but I do not think it would be more dangerous than the entrances to the Richmond and the Clarence, when improved.
201. *Mr. Black.*] Is it particularly dangerous to come out of the Manning? No; it would be safer to come out than to go in.
202. But is there any phase of weather in which it would be dangerous to come in? In certain classes of weather it would be dangerous to go in or to come out.
203. *Vice-Chairman.*] Has the western end of the constructed portion of the northern bank been injuriously affected up to the present time by the ebb tide getting behind it? Yes; both the ebb tide and current get behind it now.
204. Is that affecting the work injuriously at the present time? Only by making the work more costly by deepening the water.
205. Has it caused the training bank to sink? No; because the full depth is secured before we go ahead.
206. What is the depth of water at the present time along the constructed portion of the northern training bank? There is about 28 feet of water in front of it at present.
207. From your experience of the Clarence River, do you think it would be necessary to carry out the dotted portions of the breakwaters shown upon your plan in the Manning River? Not for some time to come; I see no necessity for it at the present time.
208. In considering the matter, therefore, do you think the Committee need have regard to the possible expenditure on that portion of the proposed works? No; I do not see any necessity for it. In no way will the work now proposed commit the country to the larger expenditure.
209. It was more with the view of the possibility of our having to extend the northern breakwater that I put the question? I do not think that it would be necessary.

210. Therefore we may confine our attention to the expenditure necessary to construct the western portion of the northern training-bank, and to complete the breakwater where the firm lines occur on the plan? Yes. C. W. Darley.
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211. Will that work remove the whole of the sand-spit shown on the plan near the entrance? We may possibly have to help it a little by dredging.
212. What will be the cost of the necessary dredging to remove it? A great deal of it will scour away, but we may have to help it. It is difficult to say what may be required, but so far as the expense for dredging is concerned, it would come out of our annual vote for dredging on the river. We cut off a small bank in the Richmond River without any dredging. As the breakwater went out so the bank disappeared.
213. Do you think the other sand-bank shown upon the plan will scour away? Yes; the water there will have a tendency to deepen.
214. Then do you think the construction of the northern portion of the work will give a good permanent channel? Yes.
215. Of a greater depth than the depth likely to be obtained on the bar? There will be a channel of from 12 to 15 feet.
216. Are you of opinion that the construction of the works proposed on the southern side of the river may be postponed until the effect is seen of the proposed works on the northern side? I cannot see that any harm would result from doing so. The southern breakwater might be postponed until we got the northern works finished. At the same time, I consider the construction of a southern breakwater and works necessary to maintain and fix the channel.
217. You do not think it probable that you may be able to dispense with the expenditure on the southern side? No; I think it will be necessary.
218. To improve the bar entrance? Yes. As long as the south spit is allowed to move about it must be a source of danger.
219. May we assume, also, that it will be necessary to construct the barrier bank as shown upon the plan? Yes; if only as a means of getting to the southern breakwater.
220. You mean that you would be unable to construct the breakwater without first constructing the barrier bank? Yes.
221. I suppose there would be a tramway along there? Yes.
222. Therefore, you see no means of lessening the proposed expenditure of £100,000? I have cut the amount as fine as I safely could.
223. *Mr. Lee.*] What provision is made for maintaining works of this character? No actual provision is made. Of course, if any harm is done, we may have to get another vote to make good the works, but we do not find that any expenditure is necessary. If any expenditure is necessary a vote is taken.
224. What is your general experience with regard to these harbour works;—does it cost much money to maintain them? Practically nothing. Take the Newcastle breakwater. It was taken as far as it was necessary to go at that time some ten or eleven years ago. Nothing has been expended there until the expenditure under the recently adopted scheme.
225. The question of maintenance, therefore, is an inconsiderable matter? Yes.
226. Will you express an opinion as to how or by what means revenue could be provided from these ports, which are improved so that the State may be, to a certain extent recouped for its expenditure? That is a matter to which I have given some consideration, especially after my visits to a great many New Zealand and Queensland ports. I may say that I think there ought to be a local tax towards paying for a portion of the works. In New Zealand, and in every case, a certain district around the river or harbour, as the case may be, is taxed. In Queensland there are several harbour trusts formed now. The Government have given practically no endowments to the works. They say, "You can carry out these works when they have been approved by us, and you can raise the necessary money by taxing yourselves for them." That is the system in Queensland on the northern rivers. The system is not adopted in Brisbane. I presume it is considered that Brisbane is the main entrance to the Colony, and that it is the duty of the Government to carry out the necessary works there. But on the important rivers to the north they have either to tax the district or to tax the goods passing in and out of the ports. In New Zealand a circle is struck round a port, or sometimes there will be a series of circles. In some cases every property within a certain radius pays so much in the £.
227. Are they permitted to impose port dues? Yes; in some cases they have done themselves harm by overcharging. In Dunedin the charges are so excessive that they are driving trade away from the port. They have to make the charges, however, because they have gone to so great an expense.
228. Is there any limit of time fixed, or is the charge permanent? It is a permanent charge.
229. The system is not one under which a certain amount is obtained within a certain number of years? No. I think rivers, like roads, should be regarded as a sort of highway. At the same time, there ought to be a tax upon the district to pay interest on the cost of the work, or a portion of it. If the Government pay a portion I think the residents of a given district ought to be made to pay the other portion. It must be remembered that property is greatly benefited by the opening of these rivers.
230. Although the district is benefited the whole Colony would also be benefited to a certain extent? Yes, from the increased population and settlement upon the soil.
231. Would a tonnage imposition be possible or politic in connection with rivers of the kind we are considering? It would be quite possible.
232. Would it be politic, seeing that the trade is done by vessels which are registered in the chief port of the Colony? I see no reason why they should not be made to pay tonnage dues.
233. There is very little foreign shipping coming to these rivers? Very little. In Queensland, a charge of 2s. a ton is made in some cases upon every ton of goods entering or leaving a port. That is the practice at Rockhampton, Maryborough, Mackay, and Townsville. The dues are collected for the trustees by the Government Collector of Customs. He pays the amount to the credit of a fund at the disposal of the trustees.
234. At the present moment we have before us no less than five proposals for the improvement of entrances of rivers on the North Coast. If these works are carried out they will involve a very large expenditure;—do you not think that if the necessities of the respective districts demand the improvement of these ports a charge of some kind should be made? It has always been my opinion that there should be local taxation towards payment for works of this kind.

C. W. Darley, 235. Are you of opinion that it is a wise step in the interests of the Colony to preserve these waterways on the North Coast? I think it is a wise principle for the Government to act upon, to improve the waterways and to develop the districts affected. The works will have the effect of opening up large districts which are capable of settling a great many more persons than are now resident there. Of course, the more you settle

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people in these districts the better it is for the country. These districts are capable of maintaining a very much larger population than they now have. People are frightened to go there owing to the want of proper means of communication. Again, if you improve the rivers you must cheapen the means of bringing goods to and fro, and a portion of the cost, therefore, should, I think, be made chargeable in the form of a tax. The residents there pay a certain price at the present time on account of the risk and danger of getting into the rivers. Freights would be reduced, in many cases, if there were a perfectly safe access.

236. In view of the fact that all the rivers on our northern coast are within a few hundred miles of the chief port of the Colony, and that behind all these rivers the richest land in the Colony is to be found, does it not appear extremely improbable that even if a railway could be constructed for less money, the produce from these districts would be conveyed by that railway at a less cost than by water? We must anticipate that produce will always go by water. It is so much cheaper than railway carriage. Even if there were a railway in these districts now, and if the present bad bars were allowed to remain, the produce would still go by water.

237. *Mr. Wright.*] If it be sound policy for the people on our coastal rivers to pay for the improvement of those rivers, would it not be equally sound policy for the people of the interior to pay for the construction of roads and bridges? I certainly think there should be taxation under Local Government for the maintenance of roads. But, as regards the northern rivers, you must remember that the Government are making roads in those districts as well as improving the rivers.

238. Do you not regard the improvement of the rivers as affording an additional road, enabling these people to get their produce to market? I do not think that argument would apply. If the Government were expending nothing in these districts in making roads it would be a different thing, but the Government are still making roads there.

239. If you make a charge upon these rivers at all should it not be a tonnage rate instead of a local tax? A tonnage rate would do, of course.

240. In that case, only those who use the rivers would be charged? The amount would come out of the residents' pockets after all.

241. *Mr. Clarke.*] In dredging the Manning River, would the sand be taken out to sea, or would it be put behind the walls? It is put behind the walls.

242. *Mr. Wright.*] You were asked to supply the Committee with certain information with regard to the watersheds of the northern rivers. I particularly desired to obtain it for our information in the consideration of these works? I have a statement showing the watersheds of all the northern rivers, the total length of the rivers, their navigable length, the width of the proposed entrances, and the mean annual rainfall. It is as follows:—

River.	Area of watershed.	Total length of river.	Navigable length of river.	Width of entrance proposed.	Mean annual rainfall.
	sq. miles.	miles.	miles.	feet.	inches.
Tweed	420	48	24	500	69·17
Richmond	2,680	149	68	1,000	51·47
Clarence	8,500	247	67	1,400	51·15
Bellinger	480	76	15	500	70·00
Nambucca	530	58	9	500	70·00
Macleay	4,580	219	39	700	46·33
Hartings	1,390	110	19	650	62·10
Camden Haven	210	18	13	400	62·10
Manning	3,190	141	29	800	47·46
Cape Hawke	510	46	.....	400	47·46 (?)
Hunter	8,270	288	49	1,200	32·16

In handing the return in, I should like to explain that it will be difficult without grave consideration to draw any conclusion from it. It must be taken with the greatest possible care if the Committee desire to draw conclusions, for instance, that because a river has a certain area, a certain rainfall, and a certain width, that ought to be accepted as a basis for designing other river improvements. The Committee must be extremely careful as to what inference they draw from any portion of it, or they may find themselves very much misled. For instance, the Tweed River has 420 square miles of watershed; the normal width of the proposed entrance is 700 feet, but I have quoted in all cases the choke width, which in this case would be 500 feet; the mean annual rainfall is 69 inches. Now, take the Clarence: It has a watershed of 8,500 square miles; it has a total length of 247 miles; the width between the entrance as proposed is 1,400 feet, and the mean annual rainfall is 51 inches. Now we will assume for a moment that these proportions in the Clarence River are exactly correct, what I want to impress upon the Committee is that they must not infer that if those particulars are correct as regards the Clarence the same ratio will apply to any other river, because nothing could be more fallacious. Suppose the proportions of the Clarence are correct, and that therefore you might find a constant, and that you applied it to the other rivers—the Tweed, for instance, what width do you think the Tweed should be? The entrance would only require to be 69 feet instead of 500 feet. In the same way, if 420 miles of watershed requires an entrance of 500 feet in width, the Clarence upon the same proportions would require to be 10,000 feet in width.

243. Is not that matter governed by the rainfall? To some extent; but the rainfall does not vary in proportion. On the Tweed it is 69 inches, and on the Bellinger and Nambucca it is 70 inches; upon the Clarence it is 51½ inches. The real point is this: the entrance is regulated more by the length of the river and the shape of the basin. The Tweed is a short river. The whole length from the sea to the source is only 46 miles. The Clarence is 247 miles in length, and 67 miles are navigable. When a flood comes down the waters are stored and are slowly given off, so that the smaller entrance does. An engineer in determining what width an entrance should be has to study a number of questions. He has to ascertain what is the width of the river at certain salient points, and that must regulate him in fixing the width of the entrance.

George Charles Yeo, Draftsman, Stock Branch, Department of Mines, sworn, and examined:—

244. *Mr. Lee.*] Can you give us any particulars as to the stock in the Manning River District? Yes: G. C. Yeo. the following return has been prepared:—

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DESCRIPTION of area in which the following Stock are returned.

Commencing on the shore of the South Pacific Ocean at the mouth of the Manning River, and bounded thence by that shore north-easterly about 20 miles; thence north-westerly about 45 miles; thence south-westerly about 50 miles; thence south-easterly about 45 miles to the shore aforesaid; thence by that shore north-easterly about 30 miles to the point of commencement.

Horses.	Cattle.	Sheep.	Pigs.
7,052	46,341	1895. 991	—
7,402	48,317	1896. 1,160	—
7,004	45,295	1897. 1,473	8,615

245. You told us the other day, in connection with another inquiry, how the stock drifted to market. Are you prepared to say now how the horses and the horned stock from the Manning River reach the market? They all go overland.

246. They are not conveyed by steamer? No.

247. The pigs would be sent by steamer? Yes; and also the sheep if there were any to send.

248. I suppose the bulk of the horned cattle find their way across to the Muswellbrook and Maitland markets? I should think so, but I could not say definitely.

249. How do the A. A. Company dispose of their cattle? They may go across to Warruh.

250. Could you say whether the stock is increasing or decreasing in the district, outside the period you have named? No; in making out the return I went back only to 1895.

THURSDAY, 24 MARCH, 1898.

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (VICE-CHAIRMAN).

THE HON. JAMES HOKINS.

THE HON. WILLIAM JOSEPH TRICKETT.

THE HON. DANIEL O'CONNOR.

HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.

GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

FRANK FARNELL, Esq.

The Committee further considered the proposed Harbour Works at Manning River.

Samuel Boulden, master of the steamer "Coraki," sworn, and examined:—

251. *Mr. Wright.*] You are master of the steamer "Coraki," trading to the North Coast? Yes.

252. How long have you been trading to the Manning? I have been going there in the "Coraki" two years and one month, but I have been going to the Manning on and off, but not continuously, since 1890.

253. What has been the condition of the entrance to the river since you have been trading there? It has varied a great deal. The channel shifts considerably. It has shifted a great deal during the last two years, sometimes to the north and sometimes to south. It shifts on the bar as much as a mile at different times. In March, April, and May of last year the water on the bar ranged from 6 ft. 6 in. and 5 ft. 9 in. to 7 ft. 6 in. at high water.

254. What is the lowest depth of water you have known on the bar during the last two years? Five feet nine inches.

255. What is the tidal range there? In spring tides 4 ft. and neap tides about 1 ft. 6 in. The north-easterly and south-easterly weather have also an influence on the tide. The south-westerly weather accelerates it, and the north-easterly weather cuts it down.

256. Has the work which has been already done there had any effect in deepening the river? I could not say whether the work has deepened it, but the bar is better now than it was last year.

257. There has been some freshes in the river during the last few months? Yes.

258. Would they not deepen the bar a bit? It was just as deep previous to the freshes of the last three or four months. The freshes, however, have made a lot of alteration inside.

259. Do you think the work marked on the plan with a black line has had the effect of deepening the river inside? I think it has deepened it as far as the wall has gone.

260. What effect do you think the proposal before us will have? I think it will keep the channel from going north as it used to do about two years ago. The channel at present runs right over the wreck of the "Murray."

261. Does not the river divide near the island shown towards the end of the northern training-wall, and is there not a channel from that point round by Harrington? Yes.

262. Does not the existence of that channel prevent the scour to a certain extent? Yes.

263. You think the confining of the waters by the construction of the training-wall across the entrance of that channel will greatly assist the scour? Yes.

264. Do you think the point to which it is at present intended to extend the breakwaters will have the effect of promoting a good scour? It may have that effect, but it would be necessary to construct the southern training-wall. The complete work would have to be carried out.

265. What is the set of the current outside the breakwater? In flood-tides usually northerly. With the ebb-tide it is inclined to run to the south. About 2 miles out to sea the current is to the southward.

266.

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- S. Bouldon, 266. Is it strong? It depends upon whether the winds have been blowing from the north-east for any time.
- 24 Mar., 1898. 267. I ask the question because the Departmental officers say that the set of the current is always southerly both inshore and out? We have proved that that is not so again and again. Going north, we have followed round the beach to get the set of the flood-tide. We have often found the current running north in the bight right up to Crowdy Head. It might run at times from 2 to 3 miles, but that would not be right inshore.
268. That is your general experience in connection with the whole of these North Coast harbours—there is a northerly set inshore, a kind of eddy? Yes.
269. Do you think the prevalence of the southerly current seaward would have the effect of keeping the mouth of the river open if a good scour is promoted by the confining of the channel by training-walls? I could not say. The breakwaters do not appear to me to be carried out a sufficient distance to meet the southerly current. There is not much strength in the current within a $\frac{1}{2}$ mile of the shore, especially to the southward.
270. The proposed works would probably have the effect of bringing a large quantity of sand down the river, and the engineering staff say that once you get that near the bar it will be swept away by the southerly current? It may be so. In my own opinion, there will not be enough current to sweep it away unless the breakwaters are carried out a considerable distance. What I have noticed is that as the present works have been carried out the bar has also gone further out to sea.
271. When the works are completed, they will have the effect of driving the bar out far enough into the ocean to bring it within the influence of the southerly current? I should think it is likely to have that effect.
272. You see the portion of the plan marked "rubble-facing"? Yes.
273. Do you think there is much danger of the river breaking through at that point? Yes.
274. Do you think the proposal to carry the rubble-facing up to the southern training-wall would make that neck of land secure? Yes, I think that should answer the purpose.
275. Do you think that the construction of a training-wall from Chinaman's Point, on the other side of the river, forcing the water into one channel, will have a certain effect in deepening the channel? I have always thought the work should have been started from Chinaman's Point, instead of from the Painted Rocks. The ebb-tide would act at once there.
276. The report of the Department shows that at the end of the wall the water is deepening fast? It may be so; but it is not so deep at the end of the wall as it was six or eight weeks ago. That is what I have heard from local residents.
277. You think then that the works proposed will have a beneficial effect? My experience in these matters is, that if the water is confined it will have a tendency to keep the channel clear. Every fresh which comes down cuts a certain amount away from the spit at the south of the entrance, and makes the bar wider than it was before. Since this plan was drawn nearly the whole of the sand-spit on the southern side has been washed away. Not more than two months ago the sand there was 2 feet above high-water, now, at spring-tide, it is 2 feet under high-water. The water has broken through the inner side of the spit near the proposed training-wall, and the last fresh we had, with a south-easterly gale, scoured it out, and left 5 feet of water. Since then the whole spit is under water at high tide.
278. Showing that the effect of confining the water by the northern training-wall has already produced a considerable scour in the river? Yes; there is at times a strong current running down; it is as much as we can do to steam against it.
279. You think the proposed works will not only have the effect of deepening the river, but also the bar? When the southern breakwater is made; but at present the bar is at right angles to the existing wall. There is a sand-spit on that side which is nearly level with the wall, and it has not been scoured. In fact, there is more sand there since the wall was made than before. The spit runs out from the Painted Rocks down to the end of the wall.
280. The sand has accumulated behind the wall, while the southern side has been scoured out? Yes.
281. You think that when the southern training-wall is built the river will be entirely scoured out by the action of the water? Yes; the southern training-wall will certainly have a beneficial effect.
282. How far do you go up the river? Up as far as Wingham.
283. What sort of water have you there? It varies from 7 feet to 16 or 18 feet in holes. The lowest depth is 7 feet.
284. What is your draught? Eight feet loaded.
285. So that you cannot go either up or down the river fully loaded? I have not loaded deeper than 7 feet 8 inches since I have been on the river. When I start from the upper and shallower portion of the river I am only partially loaded. I am picking up cargo all the way down.
286. In going up I suppose you are discharging cargo? Yes.
287. As a rule, when you come down you draw more water than when you go up? Yes, as a rule.
288. What water do you generally draw? From 7 feet 3 inches to 7 feet 6 inches.
289. You can safely navigate the bar with that draught? At present, yes.
290. What is the longest detention you have had in going in or out of the river? I have always managed to get in; but I have often been detained. For the past two years the longest detention I have had has been four or five days. I do not take more cargo than I know I can get in and out with.
291. You regulate your freight according to the water on the bar, so that you can always get in? Yes.
292. Coming out of the river what has been the longest detention you have had? The longest detention I have had during the last two or three years has been four or five days. In May last there was only 5 feet 9 inches or 5 feet 6 inches, and with any sea on you could not get out with that depth of water.
293. That has been your longest detention in getting out? Yes.
294. Have you ever known the water to be so high as to give only 1 foot 6 inches at low tide? At high-water, with a 2-foot rise, there has been 5 feet 9 inches.
295. *Mr. Hoskins.*] If the proposed works are completed as they have been described to you, do you think the entrance to the river will be exceptionally dangerous and bad—that it will be worse than that of any other river on the coast? I do not think so.
296. Do you consider that at the present time the entrance is an exceptionally difficult one? Just at present it is a little better than it was. Last year it was very dangerous, especially as the channel was going over the wreck of the "Murray" for a considerable time. I go in now close to the wreck.

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297. The works already constructed have greatly improved the entrance? I could not say that.
298. Do you not find that you can get in and out with greater facility than before the works were constructed? I have got in and out with facility before any works were constructed. The bar shifts a great deal. If the channel had followed the breakwater, I should be inclined to say that it has had the effect of deepening it, but the channel is at right-angles to the breakwater. I believe the works already constructed have prevented the channel going north, and that alone would have a good effect.
299. Do you think there is any danger, if these improvements were carried out, of the deposit of sand being shifted further out, and therefore causing an additional impediment to the entrance? That is a thing upon which I should not like to offer an opinion. I should say it would be a matter of carrying out the breakwaters until you meet the stronger current.
300. *Mr. Lee.*] I suppose you have been up to the Manning in all weathers? Yes.
301. Can you, at the present time, enter the port if there should happen to be sufficient water on the bar when there is a heavy gale blowing? When there is a very heavy gale blowing none of us can enter. It is left to the judgment of the pilot. If he thinks it dangerous to enter he runs up the signal, and it then rests with shipping-masters whether they will go in or stay out.
302. There might be water enough on the bar, but the wind blowing from a certain quarter might render it unsafe to take the bar? The wind would not affect me, and it would have to be a very heavy sea to keep me out. Coming out, of course, it would be different.
303. What is the worst wind you would have in getting in? From the south-east or south-west. We always know that if the wind shifts round from the south-east to north-west we should be able to get out in a day or so. Crowdy Head runs to the north-east, and it seems to make the sea smoother.
304. Supposing you were lying inside, loaded for sea, what conditions of weather would stop you from getting out? A heavy sea. There is now 7 feet of water at neap-tide and 9 feet at spring-tide. If we were drawing 7 feet, and we were to come down heavily on the bar, it would take the way off the ship and we would then turn round.
305. A heavy sea with wind from what quarter? South-east or south-west.
306. Have those winds the effect of piling up sand on the bar? As a rule, we find that it is the north-east winds which block up the bar more than any other.
307. That, as a rule, is not a strong wind? It is the prevalence of it which is the cause. It is a bad wind for shoaling, but it is not a bad wind for getting out.
308. If the proposed works were carried out you would have an entrance 800 feet wide;—would that, in your opinion, be wide enough? Yes, for steamers.
309. How would it affect sailing vessels? Sailing vessels would never be able to get in unless they had a fair wind. They would not be able to get in any more than they can at the present time. Supposing, for instance, the wind were coming from the westward, they could not get in. A tug comes out to them.
310. Is there a tug stationed at the Manning River? Yes.
311. Would a sailing vessel be able to take the entrance when there was a heavy flood running out of the river? It would be dangerous for even a steamer to tackle the bar when there was a heavy flood.
312. You are aware that it is proposed to narrow the entrance; the flood-waters now coming down can pass over the sand on either side; if you narrow the entrance, of necessity, there will be a stronger current of flood-water;—how will that affect you—will you be able steam against it? A great deal would depend upon the power of the boat. We never attempt any of the bars except on a flood-tide, with the exception of the Clarence River bar.
313. Under those conditions it is assumed that you always have an abundance of water under you;—would a strong current such as I have mentioned affect your coming in? Not with a powerful boat.
314. Take the boat you are commanding now? There would be a pilot there, and he would signal me if he considered the entrance dangerous. If he put up the stand-off signal it would rest with me whether I took the risk or not.
315. You have an entrance 800 feet wide, and gradually widening as you get into safer water; you will have double the depth that you now have, but you will have a stronger current against you;—would you, under those conditions, be able to take the entrance? I would not care to do so if there were a heavy sea.
316. Then, even if the proposed works are carried out, you will only be able to trade to and from the port at times when the weather is partially favourable? The flood-waters do not last long in coming out. We might be kept a day. If we were certain of the water of course we would go in. The question is, whether we are certain the depth of water is there. At Port Macquarie we used to go in at all times, as long as we knew that the water was there.
317. The assumption is that if the proposed works are carried out the water will be there? If that is so we can go in and out. At Newcastle there is plenty of water, but very often large steamers will not go in. It often happens that in a heavy south-easterly gale the stand-off signal will be run up, and often ships in ballast, with plenty of water under them, will not go in. Shipping-masters must use their own judgment.
318. But if the port is to be a good port you should be able to get in at night as well as in day time? If the entrance is made as good as the entrance to Port Macquarie was two years ago, we could do that. At least a dozen times last year I came out of the Manning River at night-time. I waited for the top of high water, and of course in winter-time the tides are highest at night.
319. Are there any sailing lights there? No; I did it at my own risk.
320. Would it not be necessary, in a port of the kind we are considering, to establish entrance and sailing lights? That is for the Marine Board to decide.
321. But you, as a master mariner, would not like to take the entrance on a dark night without sailing lights? No.
322. Therefore, if you could not do so the port would be valueless at night-time? At present we keep the river cleared, entering it by day-time only.
323. You time your sailing so as to hit the river at daylight, and on the flood-tide? Yes.
324. You can enter the Clarence under any conditions of weather at the present time? I think so. The Sugar Company's boat, a month ago, was bar-bound for six or seven days. Our boat came out; but the "Fiona" did not.
325. I suppose the steamer was weather-bound, but not bar-bound? She is a larger boat than ours, and she was probably drawing more water. I do not know what the reason was, but I know that she was bar-bound.

- S. Boulden. 326. Do you think that if a comparatively safe entrance were made at the Manning your company would be induced to send a larger description of boat there? It would rent with them.
- 24 Mar., 1899. 327. Would it be necessary to have the river deepened to enable the boats to proceed up as far as Taree? With the present draught we have, I can keep the river clear. My boat is as large as any which has ever traded there, and she is 160 feet long. I go up to Wingham, calling at each wharf as I go along, and I make on the average six trips a month.
328. Do you go right up every trip? Yes, under circumstances.
329. The produce is not brought down by droghers to deep water? There are droghers there which collect and bring the produce to the different wharfs.
330. If that be the case, the settlers are not put to any great amount of inconvenience at the present time? I cannot see that they are put to any inconvenience as regards the water-way. We take the produce when they are ready.
331. Does it happen that you take live stock—pigs and calves—and that when you get down the bar you have to land the live stock? I have never done that. In every case we get out when we can. I have brought pigs to Croki, and have watered and fed them, and have gone down again the next day. On one occasion I was lying inside the little wharf, and the tide fell so that I could not get up again as usual. I had about 100 pigs on that trip, and some poultry. They were about three days on board there. We had any quantity of water down there, and we fed and watered them just as we should do at any other time, and no harm resulted.
332. Had the pigs deteriorated in quality when they reached their destination? No; I think they were enhanced in value, because we fed them on maize. Of course, the farmers would have to pay for that.
333. It appears from what you say that you are just as likely to be weather-bound if the proposed works are carried out as you would be without them? If there were a heavy gale blowing I should be better off inside.
334. About how often would you be bar or weather bound in the course of a year? From June until February last we were only two days weather-bound.
335. Are you stuck up more than six times in a year;—how many times were you bar-bound last year—about nine days? Sometimes more than that in the course of a year.
336. I suppose there is a loss to the company from your being bar-bound? Of course, there is the men's wages, and the coal.
337. You are not burning coal all the time? If we were bar-bound three days we should go up and down the river three times.
338. Do you consider it a loss to the company for you to be bar-bound? There is a certain loss to them.
339. Are there any other steamers trading there now? No, there have been others at different times.
340. I suppose that in the busy season of the year, when freight is pretty plentiful, there might be an odd boat occasionally? There was only one boat last year to help us. The bar was bad then. But if the bar keeps as it is at present the "Coraki" will be ample to take away everything grown on the Manning. Of course, if the crossing got as bad as last year, we should have to go out with half loads.
341. Are there many sailing vessels going to the Manning? There are several; they go to saw-mills at Cooperook, Lansdowne, and Scott's Creek.
342. They carry timber chiefly? Yes.
343. Of which steamers do not carry much? We carry cedar usually; but we do not usually do the hardwood trade.
344. Sailing vessels bring down a lot of timber—a class of cargo you do not care about? Quite so.
345. I suppose they bring it more cheaply than you can do? Yes.
346. You say that you make about six trips a month? I averaged that from June last until January.
347. What inward goods did you average? The average would be 50 tons a trip.
348. What would be your tonnage from the Manning on the average? During the year I brought down about 80,000 bags of maize, 11,000 pigs, 9,000 cases of eggs, 2,000 bags of oysters, 4,000 kegs of butter, 2,000 cans of cream, also some poultry, hides, fruit, timber, and sundries. The busiest time is from April to November, and I should say that the tonnage would come to about 10,000 a year.
349. You think your tonnage coming down would average about 150 tons a trip? Yes; the boat will carry 240 tons. A great deal depends upon the crops. During the last three years they had good crops. If a flood were to come down we should not bring down more than from 30,000 to 40,000 bags of the maize.
350. Practically, that is all the traffic of the river? Yes, one way.
351. Are there many sailing vessels going to the Manning? For the last six or seven years there has been only one mill going; but at the present time there are two going, and there is another ready to start.
352. What would the sailing vessels carry usually? They would average from 20,000 to 30,000 feet of hardwood. Now and then they would carry down a little general produce; but they carry timber chiefly.
353. What is the freight? We charge 1s. a bag for maize, but what the other freight is, I could not say.
354. What are your passenger charges? £2 return saloon, or 25s. a single ticket; 25s. return steerage, and 15s. a single ticket.
355. *Mr. Black.*] What is the reason you prefer to remain inside on certain occasions when the weather is rough:—do you think your boat lacks power, or do you consider your deck cargo? The bar is like all other bars on the coast. If it is shallow, and there is a heavy sea, it is impossible to get out.
356. But you said that, even if the bar were removed, there would be some weather in which you would not be able to get out? That often applies to Sydney Heads.
357. But would it be because you have deck cargo? We do not stow the deck cargo. If we can get out we do so. We seldom lose any deck cargo.
358. I suppose you carry a number of pigs on deck? Yes.
359. If you had a number of pigs on deck, and the weather were rough, you would stay inside? We seldom consider the pigs in the matter. If we can get to Sydney we get there, whether we have pigs or not.
360. It is for general reasons that you remain inside, and not because you carry deck cargo? Yes.

FRIDAY, 25 MARCH, 1898.

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (VICE-CHAIRMAN).

The Hon. JAMES HOBKIN.

The Hon. WILLIAM JOSEPH TRICKETT.

The Hon. DANIEL O'CONNOR.

HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.

GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

FRANK FARNELL, Esq.

The Committee further considered the proposed Harbour Works at Manning River.

Thomas Robert All, Managing Director, North Coast Steam Navigation Company, sworn, and examined:—

361. *Mr. Hoskins.*] For how long have you had any connection with the North Coast Steam Navigation Company or with vessels trading to the north coast? Over thirty years. T. R. All.
362. This is a proposal to improve the navigation of the entrance to the Manning River:—do you think that the works hitherto carried out by the Department of Harbours and Rivers have improved the navigation of the river? I think the money expended has improved the entrance. 25 Mar., 1893.
363. Can you ship larger cargoes and can you ship them with greater regularity to the Manning River than you could do some years ago? Undoubtedly. I ought to qualify that reply by saying that the Manning is a river which alters very much. During the last year or two the entrance has been somewhat better than it was heretofore. Occasionally it goes back to its former condition. I have been absent in New Zealand for six or seven weeks, and I believe that while I was away the entrance shoaled up to about 5 ft. 6 in. That, however, is a very unusual thing.
364. What is the depth of the water there now? There is a fair depth of water there now.
365. Does your company use steamers of a larger carrying capacity than they used to do on the Manning River? Yes.
366. The presumption is that the navigation of the river has been greatly improved? That is not absolutely so. We are using a more adaptable class of steamers; they carry a larger cargo with a much lighter draught of water.
367. Are you acquainted with the improvements which it is proposed to make upon the river? No, I am not. I have been there half a dozen times, but Mr. John See is better acquainted with the river than I am.
368. Do the masters of vessels represent that the works which it is proposed to carry out are likely to result in an improvement to the navigation of the river? Personally, I have not questioned them upon that point; but, generally speaking, they express the idea that the improvements going on are undoubtedly of some benefit.
369. Is the trade of the river increasing? I do not think it is. I do not think the volume of trade at the present time is greater than it was four years ago.
370. Has the population upon the river increased? It has increased, but not materially. I do not know the absolute statistics, but from what I have seen, and looking at the quantity of cargo which comes out of the river, I do not think there has been any great increase.
371. The cargo brought by your steamers from the Manning has not increased of late years? No.
372. Then the improvements made on the river have not had the effect of increasing the volume of trade? I do not think they have.
373. Is it your opinion that the entrance to the Manning River is more dangerous than are the entrances to the other rivers on the north coast? Undoubtedly.
374. Why? I am not comparing the Manning with rivers like the Nambucca and the Bellinger, but with rivers like the Richmond and the Clarence. The entrance to the Macleay is better than that to the Manning. I would much rather go to the Macleay than to the Manning.
375. The reason that I ask the question is that there is a proposal before the Committee to construct a railway from Maitland to the Manning River, costing about £1,000,000, and the principal reason alleged for the line is that the entrance to the Manning is very dangerous and difficult:—the question is whether that should be considered? I cannot see how that question can come in, because the settlers on the river suffer little or no inconvenience. I think that if our secretary were to give you the statistics of the year's trade, it would be found that there were a few occasions upon which vessels have been bar-bound. At no time have they been bar-bound for any considerable period. I do not know any settler on the river who has suffered any loss from the detention of the vessels.
376. It may be inferred that the delays at the bar have been greatly diminished since the improvement works have been going on? Not greatly, but they have been diminished.
377. Communication by steam between Sydney and the Manning may be regarded as more regular than it was some years ago? Undoubtedly.
378. The argument, therefore, that the entrance to the river was so very dangerous would not apply, seeing that the navigation has been improved, and that vessels can enter and leave the port with greater facility than they used to do? That is undoubtedly the case. Of course a railway might be a convenience to myself and to gentlemen like yourselves if you wanted to get hurriedly to Sydney. You would get down in less time by rail than you would by steamer, because the steamer would have to wait for the tide: she cannot go out with the ebb tide. There is generally only one tide a day.
379. I presume that the passenger traffic between the Manning and Sydney is very small? Very small.
380. Do you think the Railway Commissioners would ever be able to take the produce of the district to Sydney as cheaply as it could be conveyed by the steamer? I do not think they could profitably do so. Of course they might take it. We only charge a matter of 10s. a ton for bringing the maize to Sydney, and we pay droghing out of that. We have a large droghing plant to keep up as well. You might safely take off 2s. a ton, and then the company's droghing plant would be a loss taking it all the year round.
381. Do the droghers you speak of take produce from the different wharfs? They have to collect it here, there, and everywhere—up the creeks and arms of the river which the steamer cannot reach.
382. The farmers have not to carry their stuff far to the droghers? No.

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- T. R. Alt. 383. It would be more difficult for them to convey their produce to the proposed railway? Yes; unless there were a railway-station to the door of every farmer.
- 25 Mar., 1898. 384. From your experience of the more regular journeys made by steamers, you are of opinion that the Government would be justified in expending more money in improving the navigation of the river? Undoubtedly.
385. *Mr. Trickett.*] I understood you to say that the trade of the Manning had fallen off lately? It ebbs and flows. The volume of trade at the present time is rather low.
386. What is the reason for that? The seasons have a great deal to do with it. In one year we may run our vessels to the river at a heavy loss on account of the small cargoes. 1890 or 1892, was, I think, the flood year, when the farmers lost nearly all their crops.
387. Have you ever lost any vessel at the Manning River? No.
388. Seeing that the entrance is spoken of as about the worst on the coast that is rather to be wondered at? It is one of the worst places to navigate. It is a shallow bar, but you very seldom lose a vessel there; you may get ashore, and have to wait to get off. It is rather costly sometimes. We have had that happen to us. We have had one boat ashore there twice within the space of a year.
389. Do you look upon the district as one which is bound to progress and advance in the future? I think it will improve, but not to the extent people would like to make out. It ought to improve as the country gets opened up.
390. Do you regard the district as being as good a district as The Tweed? No.
391. I suppose you will have observed that it is always desirable to keep open these waterways and improve them rather than allow them to go back? I think so, undoubtedly.
392. Have you visited the Manning River lately? I was there six or seven months ago. I usually go up there once a year.
393. *Mr. Clarke.*] What is the freight now to and from the Manning? I think we are charging 12s. 6d. to the Manning, and 10s. from the Manning to Sydney.
394. The average freight either way would be about 10s.? Yes; we carry all dead weight.
395. Do you think that when the proposed improvements have been effected freight will be lower than it now is? It is very hard to say. I do not think it will be much lower than it is at the present time, unless the volume of trade is much increased. If you could ensure good cargoes up and down, you could do the trade for less; but you cannot ensure that. We often keep up communication with the district at a loss to ourselves.
396. I suppose the floods have been against any increase of traffic? The floods are a great barrier to people settling on the soil; they are frightened of them.
397. Would the proposed railway from Maitland to Taree interfere in any way with your trade? I do not think it would interfere with us at all. We could compete with the railway ourselves.
398. By that you imply that water carriage is always cheaper than is railway carriage? That is incontestably proved by facts all over the world.
399. I suppose the heaviest produce you would carry from the Manning would be maize? A great proportion of our cargoes is maize.
400. The live stock would probably go by rail if possible? I dare say it would; but I think there is not a deal of live stock there at any time.
401. I suppose the only live stock would be pigs? Yes; but as the factories are increasing the traffic is diminishing. They kill the pigs, and cure the bacon there. The pig traffic is decreasing.
402. You would have the traffic either as live stock or as bacon? Yes; but it makes a great deal of difference in the earnings.
403. I suppose other live stock would go overland? Yes.
404. Have the works already constructed improved the river much? To some extent. I can recollect the Manning River when you could not get a ship in there once in three weeks. That was in 1875 or in 1876.
405. Do you think a further expenditure of £100,000 upon improvements in the river would be justified? The improvements of course would make a great difference to the entrance, but the question is a very difficult one to answer. I am not an expert, and I cannot say whether the expenditure would be justifiable or not. A good entrance would, of course, very much benefit the river.
406. You say that there has been no improvement in population or traffic within the last few years? It is not appreciable.
407. Do you see any probability of an improvement in those respects? If you could keep the river free of floods, it would undoubtedly improve. Floods are a great drawback to the river; they not only destroy the crops, but kill the live stock. One heavy flood will throw the district back eighteen months.
408. *Mr. Lee.*] You have only one boat trading to the Manning? Yes.
409. Do the steamers of any other company trade there? No.
410. One boat practically carries the whole trade of the river? It is, taking the year all round, too much for the trade.
411. Making six trips a month? Yes.
412. The steamer has been proved for some time to be sufficient for the requirements of the river? Yes.
413. If the port were improved, and the river were so dredged as to enable you to get in at all times, and to discharge your cargo at all points, it would be a great convenience to your boats and a saving of expense to the company? It would be a saving to us.
414. It is proposed to expend £50,000 more upon the works;—if these works are carried out, do you think your company would be prepared to entertain the payment of port dues or a charge of some kind from which the Government could derive revenue to pay portion of the interest on the outlay? I think we should be perfectly willing to do that, provided the dues were not put on too strongly.
415. Presuming the contemplated works would give additional facilities for shipping, and would enable boats to carry larger cargoes at a reduced freight, the payment of dues might reasonably be expected? Yes.
416. If the settlers obtained a reduction of freight in consequence of the proposed works, do you not think it would be a fair thing to ask them to return a portion of the benefit in the shape of dues? No doubt it would be a fair thing, but the difficulty is to get the money out of the people.
417. Suppose you continued to charge the present rates of freight, which, of course, would be earned, you would be inclined to favourably consider the proposal that you should pay port dues? The chances are

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are that if you give the river a first-class entrance, enabling us to get in and out at any state of the tide, we could run at reduced freights. We should have to do so, but the public would get the chief advantage.

418. If the port were made a good and accessible one, do you not think it possible that we might have some opposition on the river? That is very likely.

419. If that were the case, then, all the vessels competing for the trade should be called upon to pay port dues? Yes.

420. How would that affect you in this way: your vessels are registered in the chief port of the Colony, and are free to enter all the ports of New South Wales;—would your company consider it a hardship if port dues were imposed at the Manning and at other places where similar improvements had been carried out; would that appear to you to be too heavy a tax? It might take some years to carry all these works out. As far as my company are concerned, we have specially-built vessels, which you will not find in any other of the Australian colonies. They were designed to meet the particular requirements of these shallow-draught rivers. To a certain extent, when these rivers are deepened, those steamers will become obsolete, because they will not be required. That would mean an additional expense to us—not that I should hesitate to incur it—because the improvements to the river would be a benefit to my company. At the present time we have boats adaptable to all these rivers, such as no other company has.

421. *Mr. Black.*] Would not the boats be available for shallow-draught rivers which had not been improved? If you could find them, but I thought it was contemplated to improve all the rivers.

422. *Mr. Lee.*] Your company practically does all the shipping to the north coast? The larger proportion of it.

423. The entrances to the Clarence and Richmond Rivers have been improved, and it is proposed to improve the entrances to the Tweed, the Bellinger, the Nambucca, the Macleay, and the Manning;—the contention is, that in these rich portions of the Colony the settlers must have a better means of outlet than they have at the present time;—the question is, shall this means be afforded by improved ports or by the construction of a railway, and, if you improve the ports, are you justified in imposing dues? I certainly think some revenue should be derived from the improved ports.

424. Does it appear to you that if a railway were made along the north coast, and the ports were not improved, that the railway would entirely carry the produce of the district in competition with the water-carriage? I am quite sure it would not.

425. When you admit that, do you not admit that a great necessity exists for devoting attention to the improvement of the ports? Undoubtedly. I think the ports should be improved.

426. You would offer no objection to the payment of dues, provided that they did not amount to a serious impost, interfering with the progress of the district? No.

427. *Mr. Wright.*] I understand you to say that the trade of the Manning is not increasing? Just so.

428. Is it decreasing? I do not think it is; it remains about the same. The year 1897 was better than 1896; the year 1895 was a bad year.

429. That was owing to the floods? It was due to various causes—chiefly to bad weather.

430. You said your chief item of transport from the Manning was maize? Yes.

431. Is there a disposition on the Manning to abandon maize-culture, and to go in for dairy-farming? They can go in for the two things simultaneously. There is a lot of land adapted for pasture, and there is a lot of agricultural land.

432. If it pays people there better to go in for dairy-farming than for the growth of maize, that will have a considerable influence on your freight? Yes; an omnibus would bring it all down in that case.

433. Is there not a tendency on all the northern rivers to go in for butter rather than for maize-growing? I do not think so. I do not think people will abandon the growth of maize. It grows easily, and they get two crops a year.

434. You think the maize-culture will continue irrespective of the dairying industry? Yes; the farmers during the last twelve months have been exceedingly fortunate. They have had a better market than has been known for years.

435. Is the population increasing or decreasing on the Manning and its tributaries? I can only judge by the passenger traffic, and taking a superficial view of Taree, Wingham, Tinonee, and other places I have visited. I was there eight months ago, and I can see no difference in those places, as compared with what they were five years previously.

436. The population is not increasing? I cannot see that it is.

437. There is not much chance, you think, of increased production? No.

438. *Vice-Chairman.*] Have you kept separate accounts of your trade with these northern rivers? Yes.

439. Do you know the earnings of your boats running to the Manning and the Macleay? Yes.

440. Do you happen to remember the figures? I could not do that; and even if I could I do not think they would help you very much.

441. Could you furnish the Committee with a statement for (say) three years, showing the tonnage you have carried from Sydney to the Manning and from the Manning to Sydney? I could not give you the exact tonnage. All I know is what the earnings have been.

442. How could the Committee arrive at information upon that point? I could not give you information as to earnings. I regard that as being of a private character.

443. How many trips does your steamer make to the Manning a month? Six.

444. And to the Macleay? They are very erratic. During the maize season we sometimes run two steamers there. We run the steamers as quickly as we can to get the maize away. They grow more maize on the Macleay compared with the Manning. The Manning maize is a mere bagatelle compared with the Macleay maize.

445. How many trips do you make to the Macleay in the course of a year? I suppose about 100 trips.

446. What is the tonnage of the steamer? About 200 tons.

447. What is the tonnage of the steamer running to the Manning? About the same tonnage.

448. Upon the average, would your steamers be half loaded? Not more than that. I have the "Burrawong" running to the Macleay, and I received a telegram this afternoon with reference to her. She will carry 2,200 bags of maize, and the captain sent me a telegram to the effect that he had 1,300 bags. The reason he cannot bring the larger quantity is that there is not water enough to bring the vessel out, and they have good tides.

449.

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449. Would half-cargoes be a fair average? Yes; I think half-cargoes each way would be a fair estimate, but we have only one boat running to the Manning, and she would make about sixty-six trips a year.
450. Mr. Lee asked you as to port dues—as your boats call in at most of the northern ports, you would have the dues to pay at more than one port—what I want to know is, whether you have a direct service to each port? Yes.
451. Have you any intermediate service? Yes; to Nambucca, to Bellinger, and Port Macquarie.
452. Is not that a branch in connection with the Macleay River? No.
453. You have a steamer running direct? Yes; when the water allows us.
454. Take the Manning, the Hastings, and the Macleay;—there are three different entrances, and you have a direct service to each port? We have a broken service at Port Macquarie.
455. But the others are direct services? Yes.
456. If port dues are imposed, therefore, you would only have to pay one set of dues on account of each service? Yes. But you must bear in mind that we have a steamer which always makes a duplicate voyage, it brackets either Port Macquarie with the Nambucca, or Port Macquarie with the Bellinger. She sometimes brackets the three.
457. If dues were charged at Port Macquarie, and none at Nambucca or Bellinger that would be all right? Yes.

Captain Francis Hixson, R.N., President of the Marine Board, sworn, and examined:—

- Capt.
F. Hixson,
R.N.
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458. *Mr. Trickett.*] You know the Manning River? I know the entrance.
459. Has it occupied the intention of the Marine Board from time to time? The entrance has been a troublesome one, inasmuch as there have been frequent delays in getting vessels in and out in consequence of the obstruction to the bar.
460. What supervision has your Board over the Heads? We have a pilot station there, and there is a lighthouse; but we have no supervision over the works in the locality.
461. What are the duties of the pilots? To sound the bar, and to move the buoys into proper positions as changes take place. Also to bring in or take out such vessels as require a pilot's assistance, and perform the general work in connection with the station.
462. I suppose they have also to hoist a signal when it is unsafe to enter? Yes, and also to show the state of the tide always.
463. Have there been many casualties at the entrance to the Manning? Not many—there have been several.
464. When was the last? I could not say from memory. There has been none recently.
465. The bar at the entrance to the Manning shifts very much? Yes.
466. The depth of water is constantly changing? Yes.
467. Could you tell us what expense is incurred by the Marine Board in connection with the Pilot service? The establishment costs about £600 or £800 a year; that includes the light at Crowdy Head. The light is not exactly at the entrance of the Manning, but is at Crowdy Head, about 3 miles to the north.
468. Has the Marine Board at any time brought under the notice of the Government the insecure entrance to this port? Not specially in the case of the Manning. In fact, we have been accustomed to the Manning so long that we look upon its insecurity as a matter of course. The bar has been so troublesome that we quite accept the fact of vessels sometimes not being able to navigate it. We have a tug there to assist vessels in and out—a subsidised tug.
469. You recognise this as being one of the worst of our bar harbours? Yes.
470. Is the tug service an additional expenditure? Yes.
471. What does it cost a year? Between £400 and £500.
472. What is the name of the tug, and what is her tonnage? The "John Gollan," a tug of between 50 and 100 tons. We have so many of these tugs in various ports that I cannot remember this particular case at the moment.
473. Is she used only for towing-in sailing vessels, or does she render assistance to steamers? She helps steamers as well. It is optional with both sailing vessels and steamers whether they employ her services or not. She frequently helps both classes of vessels.
474. Is the chief difficulty at the port experienced in coming in or going out? It is more in going out. As a rule, vessels coming in are light; the difficulty is, in getting vessels to sea after they have taken their cargo on board.
475. It is chiefly owing to the sandy bar which forms and shifts at the entrance? Yes.
476. Do vessels sometimes get stuck on the bar? They frequently stick; not so much on the bar as on the spits jutting out from the shore.
477. Do they remain there as rule until the next tide? They are often got off at the same tide. We have a good plant of salvage gear there, and immediately a vessel is in distress the tug and pilot render all the assistance possible. Sometimes, however, a vessel will remain there for two or three days.
478. You see that Sir John Coode's plan shows a wave-trap on the northern side, with a breakwater at the entrance, and a training-wall of limited extent; there is also a training-wall on the southern side running along towards Mangrove Swamp; the Departmental scheme, as shown on the upper plan, is similar. The portion of the present wall marked in black has been already constructed. There is a proposed continuation of the training-wall on the southern side of the sandspits right up to the bend in the river; but the scheme omits the wave-trap on the northern side. That is practically the only difference between the Departmental scheme and that of Sir John Coode, with the exception of the continuation of the training-wall. Do you think the Departmental plan with the continuous training-wall, designed for the purpose of creating a scour, would be more effectual than that in which the training-bank stops short, allowing the water to work in among the sandbanks? I am much in favour of the Departmental plan.
479. Have you been consulted about it? No.
480. You never saw it until to-day? No.
481. From your experience, you think that a continuously close channel, such as indicated by the Department, would more greatly conduce to a perfect scour, than would the channel indicated by the plan below? Yes; a glance gives the Departmental plan the preference, to my mind, instantly.
482. Are you able to say whether the work which the Department has already carried out at the Manning has been of some advantage in improving navigation? I am not prepared to say that it has been of much advantage.

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advantage up to the present time, except that it has prevented the channel from opening to the northward, as it used to do. The breakwater has overlapped that, and has saved a great deal of trouble to which we were subjected in times gone by. I have known vessels go along the beach and make a right-angled turn to enter the river. The training-wall has had a beneficial effect in that respect.

483. The peculiarity of this port is, that the Painted Rocks are considerably inside;—the real entrance to the port is outside the Painted Rocks; and a large mass of sand, until the portion marked in black was constructed, enables the current to cut in and form a new channel at varying periods? Yes.

484. The construction of the training-bank has helped to do away with that, and to keep one channel? It has made the channel more regular, and it has done away with the objectionable channel that used to open out parallel with the beach.

485. When were the Marine Board last at the Manning River? We have not been there within the last eighteen months.

486. Do not the Marine Board inspect the lighthouses periodically? They have not done so latterly. There is a proposal to upset the Board's practice of going to these ports annually. The Public Service Board have recommended that an inspector be sent; since then the Board have not gone.

487. Therefore, you have not an opportunity to see these works? Not as I should have done a year or two ago.

488. Were you consulted with reference to these works when Sir John Coode was here? He had some casual conversation with me on the subject, but I do not know that he consulted me with reference to his design. It was more with a view to obtaining information than as to the actual design of the work.

489. As far as your experience goes, do you think that it is desirable that a work of this kind should be carried out? I think so. I am always an advocate for trying, as it were, to assist nature in any of these works. I never like opposing nature. But when the work is designed with a view of following up what nature has done, I am in favour of it. The carrying out of the breakwater beyond the Painted Rocks is, to my mind, a very good scheme.

490. Mr. Darley explained yesterday that the wave-trap designed by Sir John Coode had the object of preventing the waves from running right up the channel, but he seemed to think that the trap was not so very necessary at the Manning River, seeing that there was no settlement at the entrance, and that ships were not required to lie alongside wharfs or piers there? Quite so; there is no settlement there. As to the sea, it would run along the training-wall, and after a vessel negotiates the entrance I should not think anything of that. I do not believe very much in Sir John Coode's wave-trap. I do not think the waves in the scheme prepared by the Department would be of any moment directly vessels got inside the bar. The weight of the sea is spent upon the bar.

491. Do you think if the entrance were improved as suggested there would be likely to be a considerable deposit of sand outside the breakwaters;—would the sand accumulate there to the detriment of navigation? I think not. I think the sand would be likely to back up into the bight, but I do not think it would extend beyond the breakwaters. I think that if the stream is narrowed in the way indicated by the plan it will scour the entrance. The sand might back up behind the breakwaters, but that would have rather a good than a harmful effect.

492. Have you had enough experience to say whether you think training-walls constructed of loose rubble stone will be likely to stand? The Clarence River has been much improved by the training-walls. They have stood there very well.

493. Have you seen the walls there recently? I have not been there for the last eighteen months.

494. About what size are the stones? They are not very large.

495. They have stood well? As a rule.

496. And there is a considerable rush of water down the Clarence and Richmond occasionally? A great rush.

497. *Mr. Wright.* Are you acquainted with the ocean currents in the neighbourhood of the Manning? To the extent to which I gained experience of them when surveying the coast.

498. If it is stated by the Department that there is a southerly set in the current both inshore and off, would that be correct—we are informed by captains of vessels that there is a southerly set off shore with a northerly set inshore? I do not think there is any positive rule as regards the current. I believe the captains are correct. As a rule, there is a southerly current in the offing, but if you get close inshore there is a little eddy in the opposite direction.

499. The Department say that there is a southerly set right in to the proposed breakwaters? For my part, I am inclined to agree with the captains of vessels who have expressed the opinion you have indicated.

500. You think that in this particular bight, as in most other bights on the Australian coast, there is a northerly eddy? Yes. We found the currents most fickle. Instead of taking a straight line, we often had to zigzag, sometimes for a northerly and sometimes for a southerly current.

501. What effect would that have upon the entrance, if by narrowing the course of the river you succeed in deepening it;—would the sand be carried away or would it be likely to accumulate? I think it likely that the sand will back up behind the breakwaters. In some instances it would be carried away. The sand in many of these places makes most extraordinary changes. At the Mueleny River the entrance at one time is wholly different from what it is at another. For some reason we cannot understand, the sand shifts very rapidly at times.

502. It has been stated to the Committee that the Manning River bar will shift suddenly,—that is, within a few hours;—would you infer from that that there is no definite current,—that the shifting of the bar is accounted for by the changes in the current? There are constant changes; you never know what some of these bars are going to do; they will be one thing to-day, and quite a different thing this day week.

503. Do you not think the shifting of the bars is accounted for by the changes in the currents? I think it is likely that that and the rush of water at a time of fresh, together with gales and heavy seas, produce the changes.

504. We have it in evidence that the Manning River shifted half a mile in a few hours? I would not be prepared to go to that extent; but I know that it shifts a great deal.

505. What effect do you think the construction of the proposed works will have upon the bar? I think the changes we have been discussing will probably be mitigated by the works proposed. The sand will probably be carried out into deeper water, and will have a less detrimental effect than it has at the present time.

506.

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506. We are told that the construction of the northern training-wall has deepened the water very much—in some cases to 25 and 26 feet: the deepening of the water has removed the sand further out to sea. Supposing the whole of the channel from the mouth to Chinaman's Point is deepened by 6 or 7 feet by the construction of the proposed works, what is to become of the sand taken away:—do you think it is likely that it will lodge at the mouth of the proposed works? I think it will go further out into the ocean than it otherwise would do, and will have a less objectionable effect.

507. You do not think the tendency will be to pile up a still bigger bar of sand than now exists? I do not think so.

508. You think the ocean currents, whichever way they go, will disperse the increased accumulation of sand? Yes.

Captain John Jackson, Manager of Public Wharfs, made an affirmation, and was examined:—

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J. Jackson.
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509. *Mr. Clarke.*] What is the practice on our coastal harbours as regards the imposition of port dues? There are no port dues charged excepting at Sydney and Newcastle.

510. Upon none of the rivers? No.

511. Are there not wharfage rates charged on some of the rivers? Only at Coffs Harbour and at Woolgoolga.

512. Are there no charges at Byron Bay? The wharf there is leased. I think they charge a trifle there now; but it is optional with the lessees.

513. Does it not seem rather strange that harbour or wharfage dues should be charged at these three places, and at no other part of the coast? The expenditure at Coffs Harbour and Woolgoolga has been pretty heavy; there is a great deal of wear and tear. The revenue obtained will only pay the caretaker.

514. Is that the reason why charges are made at those particular places and not elsewhere? I presume so.

515. Are there not charges at some places to the south—at Wollongong, for instance? There are no wharf dues charged at Wollongong now; only tonnage dues and pilotage.

516. What is the rate charged? Ten shillings per diem upon a vessel under 240 tons, or a halfpenny per ton per diem on vessels over 240 tons; that is, on vessels coming in for the purpose of loading.

517. Are there no charges at Eden? No.

518. Or on the Clarence or Richmond? No.

519. Considering the amount already expended upon the improvement of the Manning River, and the additional amount which it is proposed to expend to render the river navigable, do you think it fair that tonnage or wharfage dues should be imposed there? I think it would be very fair, having regard to the benefits derived by the public from the improvement of the ports. The residents will be greatly advantaged. I think it is only fair that tonnage dues should be charged upon vessels taking away produce.

520. You would not charge the residents of the district? The residents will pay the dues; the steamship companies will not pay them.

521. You could get at the residents better than by charging the vessels? No; the company will charge 6d. more for freight, and that will cover the lot.

522. *Mr. Lee.*] The wharfs on the Richmond and Clarence are Government wharfs? Yes.

523. Are any charges made? No; unless they are proclaimed public wharfs under the Act. The Government can impose wharfage, but they do not do so. It would not pay to impose it. On the Richmond there are thirty-six small Government wharfs, all constructed by the Government. The Government has to keep them in repair. It has been my policy since I have been in the Department to lease these wharfs to private individuals at a nominal rental, upon condition that they keep them in repair. I try to get rid of them as opportunity offers, to save the Government the annual expenditure, which is very heavy.

524. How many wharfs are there on the Clarence? A great many. I could not say how many, speaking from memory.

525. You have some wharfs on other rivers, and also some on the South Coast;—what is the total number? I tried to arrive to-day at an estimate of what they have cost, and I think they have cost somewhere about £150,000. That does not include Kiama and Wollongong.

526. Then there has been the cost of maintenance? Yes.

527. Does it amount to 5 per cent.? After a few years it would do so.

528. I suppose these wharfs were built to facilitate the shipment of the produce of the districts? Yes.

529. Has there ever been a charge by the Government upon any of them? Not on most of them. In 1881 or 1882 a charge was made at Kiama, Eden, Wollongong, Morpeth, and Newcastle; but it was cancelled after the first year. I do not think it was seriously intended.

530. Can you give us any idea why the charges were abandoned? No.

531. It is not within your recollection that any wharfage charge has been made upon any of our rivers to recoup the Government for the outlay? I am sure of that.

532. The Government build the wharfs and have to maintain them for the public convenience? Yes.

533. Would the letting of the wharfs carry with it the right to make a charge? Yes; but, as a matter of fact, they would not do so. These wharfs are very small places, only about four piles, costing from £150 to £500 each. There is a cluster of farmers around them, and the farmers bring their produce there. There is a shed, and the farmers use it for the storing of their produce.

534. The majority may be small wharfs of that description, but still there are large piers; for instance, take Ballina and Lismore? The Ballina pier is let, and the one at Lismore is handed over to the municipal council. The Coraki wharf is also let.

535. I presume the lessees do make a charge? They do in some cases; but at Coraki they do not. It is added to the freight. The wharf is in the hands of a steamship company.

536. The Government hand over the wharfs to get rid of the maintenance? Yes.

537. But if the respective local bodies make a charge, how is it that the Government do not do the same thing? It is only at Lismore that a charge is made, I think, by the municipal authorities.

538. I suppose it has become the custom upon these rivers so long that it is a difficult matter to alter it? Yes; you could not very well alter it.

539. Are you still building wharfs on these rivers upon the same principle? Yes.

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540. The wharfs are under your charge? Not unless they are proclaimed under the Act.
541. And the moment they are proclaimed, a charge is made? The charge can be made.
542. It is proposed now to improve five or six rivers on the northern coast. Would you with your experience of shipping business, think it in the interests of the State, having regard to the necessity for maintaining the works, that a charge of some character should be made (say) in the shape of port dues? I have a strong opinion upon that point. I do not think the State should construct such costly engineering works without being recouped to some extent. Of course, we cannot get the interest on the total expenditure, but I think that those who benefit by the expenditure should contribute towards the interest.
543. And you think port dues would be more easily collected? Yes.
544. It would in reality be the payment for services rendered? Yes.
545. There is no doubt that the boats which now trade to these harbours would have an easy time if these works were carried out? Yes.
546. They will carry a third more cargo than they do at the present time, and they will be under no greater expense? Yes, and there will be no detention.
547. You think, therefore, that the traders could well afford to pay the extra money? Yes.
548. *Mr. Hoskins.*] Is it your experience that in other parts of the world where wharfs are erected for the public accommodation a charge is invariably made to the persons using them? I never knew a port anywhere, excepting in this Colony, where wharfage charges were not made.
549. *Mr. Wright.*] What dues are charged in Sydney at the present time, exclusive of the wharfs? Harbour and light dues, tonnage dues, and pilot dues. The harbour and light dues are included in the tonnage dues.
550. Your experience of other countries is that there are charges in every harbour? I know of only one place where no such charge is made, and that is Hongkong.
551. Are there any harbour dues in the port of Newcastle? I think that what is charged in Sydney holds good for six months in Newcastle. But there are pilot dues in Newcastle, and vessels loading there pay a halfpenny a ton while loading. A great many vessels do not pay pilotage dues at all at Newcastle—they are exempt.
552. But if a vessel does not fly the exempted flag she must pay pilotage dues? Yes.
553. Upon the northern rivers the Government subsidise a tugboat and there are pilot-stations? Yes.
554. Is it compulsory upon vessels trading there to take a pilot and tug? Most of the captains trading there have exemptions.
555. They do not take a pilot or tug? Sometimes they may be compelled to take a tug.
556. The Committee are to understand that the Government keep special tugboats and pilots on the northern rivers, and that there is no compulsion on vessels to pay pilot or port dues? Quite so.
557. Do you know why the wharfage dues were discontinued at Newcastle? I think Mr. Watson was Treasurer at the time. There was then very little importation at Newcastle. The port was used chiefly for its export of coal. Since then things have altered considerably, and the import and export trade of Newcastle other than coal is now very large.
558. Is it not contended at the present time that wharfage dues at Newcastle are contained in the freight paid to the Railway Commissioners for the use of the railways and of the steam-cranes? Yes.
559. There is a charge of 10d. upon every ton of coal shipped at Newcastle for the use of the railway and cranes, irrespective of the distance from the wharf from which the coal is brought? That is so, I believe.
560. The statement of the coal-owners is that this heavy charge of the Commissioners includes not only the railway charges, but also the wharfage dues? Yes; but I do not consider that they pay wharfage at all.
561. You regard the payment as being solely for railway rates and the use of the steam-cranes? Yes.
562. You said you believe in wharfage dues upon all our coastal harbours, and that owing to the smallness of the trade it would be impossible to collect them, the salary of the collector amounting in some cases to more than the amount collected;—might not the difficulty be met if you charge tonnage dues? Yes.
563. They would be very simply collected? Yes.
564. Do you think it would be fair to the country and to the trading community upon these rivers that such a charge should be made? I do.
565. What would you consider a fair tonnage charge for the northern rivers—take the Clarence River, for instance? I am not prepared to say what should be charged; I have not thought much about that point.
566. Do you think you could collect enough to pay interest on the outlay? No; but we could collect a good deal towards it.
567. Do you think you would collect enough to pay the salaries of pilots, the tugboats, and light-houses? Yes.
568. By that means a considerable saving would be effected in the annual expenditure of the State? Yes.
569. *Mr. Hoskins.*] What charges are imposed in British ports, as a rule; take Glasgow and Liverpool, for instance—I am not referring to the dock charges, I mean the port charges? I could not say from memory, but I know that they are heavy.
570. You think that a moderate charge might, with justice, be made upon these northern rivers? Quite so. I would not advocate anything oppressive. I would propose only a fair charge for services rendered.

Henry Spondly, Compiler, Government Statistician's Office, Chief Secretary's Department, sworn, and examined:—

571. *Mr. Wright.*] Have you prepared a statement with regard to the proposal under consideration? I, H. Spondly, have made out a statement in two different forms. In the first instance, the statement applies to the district from which we consider the trade goes to the Manning; the second statement relates to the whole of the Manning electorate, which goes rather farther to the north. The statements disclose the population,

H. Spondly. population, the area occupied, the different forms of occupation, the area under various crops, the quantity
25 Mar., 1898. of the chief crops, live stock, and the production of butter. They are as follows:—

Manning River District and Manning Electorate.		
	River District.	Electorate.
Estimated population on 31st December, 1897.....	8,100	9,130
	acres.	acres.
Total area.....	1,477,300	1,041,000
Occupied area—		
Crown lands.....	88,300	95,000
Alienated lands—		
Freehold.....	219,000	241,900
Private leasehold.....	121,200	130,000
	340,200	372,900
	428,700	467,500
Area under crop—		
Wheat.....	460	500
Maize.....	17,540	20,030
Other grain crops.....	1,150	1,280
Lucerne and sown grasses.....	120	140
Sorghum.....	210	240
Root crops.....	310	350
Tobacco.....	30	35
Sugar-cane.....	8	7
Vineyards and orchards.....	270	300
Market gardens.....	60	70
Minor crops.....	170	195
	20,326	23,147
Under permanent artificially-sown grasses.....	3,000	3,450
Production—	bushels.	bushels.
Wheat.....	7,020	7,700
Maize.....	624,930	713,880
Hay.....	770	880
Potatoes.....	1,160	1,320
Live stock—	No.	No.
Horses.....	6,270	7,030
Cattle—		
Dairy.....	6,920	7,670
Ordinary.....	26,570	29,320
	33,490	36,990
Sheep.....	980	1,110
Swine.....	4,340	4,650
	lb.	lb.
Production of butter.....	199,500	221,050

TUESDAY, 20 MARCH, 1898.

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (VICE-CHAIRMAN).

The Hon. JAMES HOSKINS.

The Hon. DANIEL O'CONNOR.

JOHN LIONEL FEGAN, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Harbour Works at Manning River.

Henry Richard Carleton, Principal Assistant Engineer, Harbours and Rivers Branch, Department of Public Works, sworn, and examined:—

- H. R. Carleton.
29 Mar., 1898.
572. Mr. Hoskins.] How long is it since you were last at the Manning River? A year or eighteen months.
573. Works have been going on there since you visited the place—works undertaken by the Harbours and Rivers Branch for the improvement of the entrance to and of the general navigation of the river? Yes; the contract that was then let has been running ever since.
574. Is there an officer of your Department down there looking after the work? Yes; we have a resident inspector there.
575. Is there a tug kept to tow in vessels? There is a subsidised tug; but it is under the control of the Marine Board.
576. Sir John Coode reported upon the question of improving the entrance to and the navigation of the Manning River? Yes.
577. But the department is not following out his recommendations? Except that we are extending the northern training wall, and omitting the wave trap, the scheme is practically Sir John Coode's.
578. What is the primary object that the Department have in view—the improvement of the entrance or the improvement of the navigation of the river? The improvement of the unstable portion of the river.
579. Has the carrying out of the northern training-wall improved the navigation of the river by giving more water at the entrance, or stiller water? I doubt if there is any permanent improvement yet. The wall

H. R.
Carleton.
29 Mar., 1898.

- wall has hardly been carried far enough. Still, the inner crossing has been improved slightly.
580. Can steamers ordinarily trading to the river enter more easily now than they could before the works carried out by your Department were commenced;—is there less detention? I think so. The periods of detention are shorter.
581. Evidence has been given to the effect that the entrance to the Manning River is about the worst upon the coast;—is that your opinion? It is as bad as any of them.
582. But in your report you say, "The Manning entrance, in comparison with most of our east coast rivers, is, therefore, remarkably free from reefs and other obstructions of a rocky nature"? I made borings at the entrance in 1888, and I ascertained that there would be no difficulty in obtaining a scour. I proved that there was practically no rock down to a depth of 30 feet below low water.
583. The difficulty at the entrance is caused by the collection of sand there? Yes.
584. And you anticipate that you will be able to get rid of that sand by causing a greater scour? Yes; by concentrating the tidal and flood-waters upon the bar.
585. The Committee have before them a proposal to construct a railway from Maitland to Taree, one of the most urgent reasons in favour of which is the argument that the Manning entrance is exceedingly dangerous, and that steamers are frequently delayed there, and many of them have been lost;—do you think that the proposed work will improve the entrance? I think so. I think that if the scheme is carried out it will give a fairly safe port.
586. The navigation of the Manning would not then be exceptionally dangerous? I think not. There will always be times when it will be advisable for steamers to stand off; but that happens all along our coast during easterly gales.
587. And it happens in England too? Yes. However, if the proposed scheme is carried out, those times will be fewer, and the detention will be less.
588. Will the depth of water obtained be sufficient for the class of vessels trading there? I think we shall be able to get a boat drawing 12 feet or 15 feet up to Taree. Once inside the entrance there would not be much dredging required to get a boat of that draft up there now. There are only one or two shallow places in the river, and they are of no great length.
589. The difficulties lie at the entrance? Yes.
590. By causing a great scour at the bar and by dredging you will be able to get rid of them? Yes.
591. Have you a dredge there now? Yes.
592. Is it a sand-pump dredge? No; it is a bucket dredge. The sand-pump dredge has been removed.
593. Would not a sand-pump dredge be better for dealing with sand? Yes, if the water was sufficiently smooth; but for a sand dredge you want a wall behind which to pump the sand; otherwise the sand gets washed back into the channel.
594. The first work the Department would take in hand would be the training walls? Yes.
595. The southern training-wall would not be so long as the northern training-wall? It would be only about half as long.
596. *Mr. O'Connor.*] What is the distance from the entrance to Taree? Eighteen and a half miles.
597. *Mr. Fegan.*] What is the draft of the vessels going up the river now? About 7 feet.
598. *Mr. O'Connor.*] About 500 tons burden? No; about 350 tons.
599. *Mr. Fegan.*] There is a greater depth of sand above the rock than was first surmised? Yes; by keeping away from the rocky point we shall be able to get nearly any depth we like.
600. It is not intended to charge any toll for the use of the river? I believe not.
601. What amount has already been expended at the Manning? £23,000. We have a balance of about £19,000 left.
602. Is that upon the votes for several of the rivers? No; that is the amount of the unexpended votes for the Manning. £17,000 was voted in 1894, £10,000 in 1896, and £15,000 in 1897, or £42,000 altogether. Of this amount £23,000 has been expended.
603. *Vice-Chairman.*] Upon the completion of the proposed work will the annual expenditure in connection with the river be lessened? Yes.
604. What is the present annual expenditure? Upon dredging?
605. Upon dredging, tug service, and so on? I do not know what the tug subsidy is; you would have to obtain that information from the Marine Board—but probably £500 or £600 a year is paid.
606. What is spent upon dredging operations? The expenditure varies very much.
607. What has been the average expenditure for the past four or five years? £3,500 a year.
608. Apart from the cost of the work now being carried on? Yes.
609. Upon the completion of the proposed work what would be a fair provision to make for the keeping open of the river? It would be necessary to keep one dredge always upon the river. That would cost from £1,500 to £2,000 a year.
610. The saving effected would be approximately £1,500 a year? Yes; there would be that saving. We should also save the whole of the dredging done at the entrance. Some £15,000 has already been spent there in dredging.
611. Are you of opinion that it would be possible to dispense with any part of the proposed scheme and still obtain a sufficiently good channel? I hardly think so. Mr. Darley has cut the estimate as fine as he could. There were other walls included in the first scheme which he has cut out.
612. You are of opinion that it will be necessary to carry out the whole of the work shown upon the plan in firm red lines? Yes.
613. I suppose you share Mr. Darley's opinions that the breakwaters will not be necessary for some years? It will be many years before they are required.
614. When the work is completed, without the breakwaters, what will be the average depth of the river? From 12 to 15 feet.
615. There will be from 12 to 15 feet where the bar is now? Yes; there are only one or two bad places between the entrance and Taree.
616. *Mr. Hoskins.*] Are you of opinion that when the proposed works are completed there will be no necessity for any large expenditure to further improve the navigation of the river? Yes; there will be always a certain amount of maintenance to be paid for; but that will be comparatively small.
617. *Mr. Fegan.*] Will the amount you have in hand complete the scheme in view? No.
618. How much more will be required? £81,000. We shall require £100,000 altogether.

WEDNESDAY, 30 MARCH, 1898.

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (VICE-CHAIRMAN).
 The Hon. JAMES HOSKINS. | JOHN LIONEL FEGAN, Esq.
 The Hon. DANIEL O'CONNOR. | FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Harbour Works at Manning River.

Charles Edward Bennie, Chief Draftsman, Department of Lands, sworn, and examined:—

C. E. Rennie. 619. *Mr. Wright.*] You have brought a plan with you? Yes. I place before the Committee a map, which I have had prepared, showing the tenure of land within a portion of the Manning River watershed.
 30 Mar., 1898.

620. Will you describe the area to which you refer? It comprises the eastern portion of the watershed of the Manning from a point about 2 miles east of the village of Nowendoc to the sea-coast.

621. How far does it extend from Taree? Roughly speaking, about 50 miles.

622. And how far north and south of the river? We have taken the borders of the watershed on the north and south sides, but we have not gone further back than Nowendoc, because the country west of that place is served by the New England railway.

623. The borders of the watershed of the Manning north and south would embrace country lying within 15 miles of the river on each side? Within 15 or 20 miles of the river on each side.

624. The area you have described embraces all the land on the Manning River and its tributaries which is suitable for agriculture? Yes, east of the village of Nowendoc.

625. What is the explanation of the various colours shown on the map? The area tinted blue represents alienated land, which comprises 364,200 acres. The area hatched blue is part of the Church and School lands under lease, and amounts to 25,200 acres.

626. Is this good arable land? There are some agricultural and some pastoral leases upon the Church and School Estate; but I could not tell you the character of the land. Reserved land is tinted green, and comprises 135,200 acres. Crown land is tinted brown, and comprises 637,400 acres.

627. Am I right in assuming that most of the Crown land shown on the map is only fit for pastoral purposes? A good part of it is not fit for pastoral purposes. It is thickly timbered, rough country, and very slightly grazed. About 259,000 acres are held under occupation license.

628. Is the rest of the land unoccupied? Yes.

629. Then it is practically worthless? Yes, for settlement purposes, though there is some good timber I believe.

630. It is what is known under the Crown Lands Acts as inferior land? Yes.

631. It might be leased if a very low rental were charged? Probably. I do not know the country myself; but I believe that it is poor. There is a very large reserve near Tinonee.

632. Do you know anything about the quality of that land? No.

633. Is the reserve far from Tinonee? It runs up to within a quarter of a mile of the town.

634. And almost down to the coast? It goes down to the coast, and as far as the southern limit of the area shown on the plan. There is another large forest reserve, containing about 15,000 acres, just south of the village of Giro. It is quite possible that we have gone a little far back there. The country west of that point goes to the New England line.

635. How much Crown lands, as shown on this plan, would be west of a north and south line 20 miles west of Taree? I suppose, roughly, about 350,000 acres.

636. About one-third of the Crown land of the district? About one-half of the Crown land. We did not know in the office what the trend of the traffic was; but I think I include all the country from which traffic goes to the Manning.

637. Is there any likelihood of much of this land being thrown open for settlement shortly? Pretty nearly all the land coloured brown is open for conditional purchase now.

638. There is very little occupation there? Very little.

639. Will the Committee, therefore, be right in assuming that the land is comparatively poor? Yes.

640. Have you been on the northern rivers at all? I have been on the Manning once or twice; but I have not travelled there to any large extent.

641. I suppose you are aware that the agricultural land upon the Manning, as upon many other coastal rivers, is in narrow strips? Yes, along the banks of the river.

642. Therefore, the Committee will be right in assuming that there is not much possibility of a large increase in population? Not so far as the agricultural and pastoral industries are concerned. There may be an increase of population in connection with the timber traffic.

FRIDAY, 1 APRIL, 1898.

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (VICE-CHAIRMAN).
 The Hon. JAMES HOSKINS. | JOHN LIONEL FEGAN, Esq.
 The Hon. DANIEL O'CONNOR. | FRANCIS AUGUSTUS WRIGHT, Esq.

The Committee further considered the proposed Harbour Works at Manning River.

George Walters, general manager, Australasian Timber Company, sworn, and examined:—

G. Walters. 643. *Mr. Fegan.*] Have you any mills on the Manning? One.
 1 April, 1898.

644. How many men do you employ? Between sixty and seventy.

645. What is your weekly output? About 60,000 feet. We have the machinery for a large mill ready in Sydney. We intend to erect that mill on the Manning. I have had a mill on the Manning for seventeen years.

646. Have you ever found the river there unnavigable? Yes; and I have been put to great inconvenience by it.
647. Recently? No.
648. How long is it since there has been an improvement? Since the breakwater was made.
649. Were not the works there stopped for a considerable time? I think they were stopped for a short time.
650. You do not know why they were stopped? No.
651. Did not the training-walls give way? I do not think so.
652. You desire to give evidence to-day chiefly as to the value of the timber trade of the Manning? Yes. We have a company, floated in London, with a capital of £50,000, and the Manning is the chief place where we have mills. We have also two mills at Camden Haven. On the Manning there are forests second to none in the colonies.
653. What timber do you get? Blackbutt and tallow-wood are our chief timbers. We have ironbark, but we do not cut much of it. We have nearly 500,000 feet of timber on the Central wharf now ready for export.
654. You have gone largely into the export trade? Yes, very largely. We export both for Scotland and for England.
655. Do you find the home market a good one? We have had a hard fight, and have spent a lot of money in getting our timber into the market. At the present time we are only making a very small interest upon our outlay; but we have great hopes of improvement during the next year or two.
656. What has made it so hard to get into that market—is it because the timbers are unknown? That is the whole secret. When we sent our Mr. Scott from Sydney, they told him, "We do not dispute the goodness of your timbers; but lay them down and prove them. We are not going to the expense of proving them." We had to give many thousand feet of timber away in order to prove its value.
657. *Mr. Hoskins.*] Has not the Jarra Company of Western Australia been more pushing than you, and thus supplanted you in the English market? They got the start of us with their jarra; but we have a timber here called red mahogany which can hardly be distinguished from jarra. If we had it in large quantities we could pass it off as jarra; but we have not much of it. We have sent our blackbutt to England and we had to prove that it was equal to the jarra. Now, however, we are getting very large orders from the Caledonia Railway Company. I was the first man to introduce timber tramways on the north coast. The trams are drawn by horses; but we intend shortly to go in for locomotives such as they use in Western Australia. Along the north coast the forests have only been tapped for a few miles inland, whereas the best timber lies 10 miles or more back. The timber that has been taken out up to the present has come from the outskirts of the forest, and is the stunted growth. Further back you get an altogether superior timber.
658. Have you much tallow-wood? We have just put down 26 chains of tramway, and our foreman tells us that along this line of tramway we shall get 500,000 feet of tallow-wood.
659. Tallow-wood is a superior timber? Very superior.
660. Do you find any market for it? We have not tried it in England; we have only tried to push the blackbutt there. We can get a very fair price for tallow-wood out here.
661. Do you find the Home market better than the local market? If we threw up the export business, and supplied only the local market, we should glut it in a month.
662. You are finding a footing in the "Home" market which you believe you will be able to hold against all-comers? Yes.
663. I suppose the improvements to the river really mean the saving of your trade? They will save it wonderfully.
664. What is the longest time for which vessels have been bar-bound in the river? The mills which we have on the Manning we let for the last eighteen months. Previous to that, I ran a mill for fifteen years there single-handed.
665. You are going in now chiefly for the export trade? Yes. We have refused city orders altogether. We are cutting expressly for the Home market.
666. I suppose this gives a large amount of employment? At the present time we are employing 150 men in the three mills that we are running, and we have machinery for another mill ready in Sydney which will employ about 120 men more.
667. Is there much ironbark? There is a good deal of ironbark on the Manning.
668. I suppose you supply the Sydney market with ironbark? We have done a little with ironbark; but we are not sending it out of the Colony.
669. When these works are completed, larger steamers will be able to go up the river? I do not know that we want larger vessels. We were the first to go in for scows. They carry all their cargo on deck, and only draw about 5 ft. 6 in. If the entrance were better, the vessels could often get in and out when that is impossible at present.
670. The present difficulty would be overcome? Yes, to a great extent. Of course, there will always be heavy seas at times; but our position would be greatly improved. In the opinion of most people the breakwaters should be carried out on both sides.
671. Do you send planed timber Home? No.
672. Only rough timber? Yes. We are also dressing chairs and keys for the railway company. If both breakwaters are carried out it will give a better scour. There is a narrow spit upon the south side, and if it were to break through, the work that is now being done would be useless.

FRIDAY, 13 MAY, 1898.

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (VICE-CHAIRMAN).

The Hon. JAMES HOSKINS.

The Hon. CHARLES JAMES ROBERTS, C.M.G.

The Hon. WILLIAM JOSEPH TRICKEY.

The Hon. DANIEL O'CONNOR.

HENRY CLARKE, Esq.

CHARLES ALFRED LEE, Esq.

GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

FRANK FARNELL, Esq.

The Committee further considered the proposed Harbour Works at Manning River.

C. M. Boyce.

Charles Macleay Boyce, solicitor, sworn, and examined:—

13 May, 1898.

673. *Chairman.*] You are a solicitor now practising in Sydney? Yes.
674. You are familiar with the nature of the proposed scheme to improve the entrance to the Manning? Yes.
675. *Mr. Lee.*] How long did you reside in the Manning district? About fifteen years off and on. I practised there for six years, and two years ago I bought in in Sydney and came down here.
676. During your residence there did you give much attention to the question of improving the harbour? It was much considered, and, of course, I went into the matter with the others. I had the advancement of the district largely at heart, and I went into the matter rather fully.
677. Was there a committee, progress or otherwise, to advocate the improvement of the harbour? There have been local committees at different towns on the river, but there was not one general committee. Taree and Wingham are incorporated towns.
678. What do you think would be the effect of the proposed works, not including the two breakwaters, if carried out? I certainly think the effect of concentrating the stream in so narrow a place would cause the flats both inside the river and at the entrance to scour away. There is a large flow of water, and if it were concentrated in that space—1,000 feet I see it is—it certainly would have that effect.
679. Under what conditions have you seen the bar? Under very many conditions. I have crossed it, I suppose fifty times, and on various occasions I have been at the head on each side of the bar.
680. What is the chief difficulty in connection with the bar from the navigation point of view? The difficulty is that the channel is hardly the same from one week's end to another. On one trip you cross in probably on the north side, but a month afterwards you go in by the wreck of the "Murray" to the south of the proposed breakwater. It is a shifting channel, and it varies in depth from one week to another.
681. That I presume was largely in consequence of there being no headland on either side, and a large deposit of sand outside the Painted Rocks? That is the chief reason of it. The sand shifts backwards and forwards.
682. Were you in the district when the piece of training-wall tinted black on the plan was built? I was there when a great deal of it was built. I was solicitor for the contractor, and I went over the work with him.
683. Had it the effect of causing the sand to pile up behind it? Certainly it did.
684. Did it have any marked effect on the depth of water in the immediate vicinity and further out on the bar? It had right up against the wall, but as to its effect further out I could not say.
685. Seeing the short distance it is intended to carry out the north training bank, do you think it will be sufficiently far to set up a scour to give the depth of water required to accommodate the steamers which are going there? I should think so.
686. At the present time there is a sand bar on the south side reaching almost across to the northern portion? Yes.
687. In time of bad weather I presume the sand is piled up at this particular point, and makes the entrance so difficult? After any spell of bad weather the channel alters.
688. The constructed work terminates inside the sand bank, and the question is does that go out sufficiently far to set up a scour to remove the whole of that matter? I should hardly like to say that it would absolutely. I think it would take off the northern end effectually.
689. Did anything occur during your residence to lead you to suppose that the constructed work does not go out sufficiently far? I cannot say that I did.
690. When you spoke of the deepening of the water by the construction of the training-wall, I suppose you meant that the water had deepened immediately underneath the wall? The deep water extended to a distance of 20 or 30 feet from the wall. It may have extended out a little further.
691. You are prepared to accept the departmental proposal? Certainly.
692. And if the works which the professional officers of the department have designed will have the effect of giving a secure and permanent entrance, you think it will be quite sufficient? Yes.
693. What, in your opinion, is the position of the farmers or other producers in that district? The position of the farmers at present is an improving one. They have had various fairly good seasons, but if that work were carried out it would wonderfully enhance the value of property in the district as well as the position of the farmers. At present the farmers are under a great disability as to anything which is perishable. For instance, their eggs always command 1d. a dozen less than eggs from the south coast, and 2d. a dozen less than eggs which come down by rail simply. Their eggs are delayed occasionally at the bar, and therefore they have got a bad name in the market. It is also the case with their pigs. I think it is the best pig-producing district in the Colony. On an average, I suppose, £250 or £270 worth of pigs come down every week.
694. In what way would property be largely improved? Simply because you have a readier transit to market for the produce, and your yearly income from your produce is greater from the fact that you can take advantage of better prices in the market.
695. But the chief product is maize? The chief product has been maize; but sometimes they put the maize into pigs.
696. Is not that likely to continue to be the case? Not so largely as heretofore. They have gone in for dairying a great deal more during the last year or two.
697. Are they likely to convert their cultivation lands into grazing lands? They are doing it in a great number of instances. One reason is, that if they have a drought or a flood they lose the whole of their year's

- year's work. They have only one crop of maize a year, and if they lose that crop they lose everything. Whereas if they get cows and have a dairy-farm, one flood does not affect them very much.
698. Do your remarks apply to river-bank land or to land lying back from the river? The land lying back at any distance from the river is not suitable for crops or maize. The land which is out of reach of flood is not usually good agricultural land.
699. Is it rich land on the river banks which are going out of cultivation and going into grass? To a large extent, yes.
700. If dairying should supplant maize, there may be a more valuable product to carry, but there would be very much less freight? I do not think so.
701. You could not expect to get the same tonnage of butter as of maize? I do not suppose there would be, that is, if the whole of the land were put in grass.
702. Have any of the settlers been seriously inconvenienced by being unable to get their produce to market? Undoubtedly they have.
703. How did it arise? Suppose there was a good market for maize or pigs or any other product, and they wished to catch the market. They would bring their produce down, it would be delayed at the bar a week or ten days, or three days, and thus they would miss a good market which others could take advantage of. It has often happened that the farmers on the Richmond and further north have taken advantage of a market, and that the farmers on the Manning could not get their produce to that market.
704. They have had to get their produce to market when they could, irrespective of market value? Yes.
705. You think that if they could take advantage of a rising market, like the people on rivers with better entrances can do, it would be a means of improving their position? Undoubtedly.
706. I presume all the land suitable for cultivation in the district is pretty well secured? The best of the land has been taken up. I do not think there is much cultivation land to be taken up.
707. Where could extra settlement take place? In the upper part of the river, and at the top of some of the tributaries, but not along the main river.
708. Although some of these rivers are not so navigable as the main river, yet on the banks there is very rich land? Yes.
709. But the land is not so extensive? The good land does not run so far back.
710. But still it is equally good in quality? Most of the tributaries have what they call second-class agricultural land, but still it averages in value from £8 to £10 an acre when cleared and prepared fit for the plough.
711. During your long residence, did you notice any considerable progress in the district? Undoubtedly. The settlement has become thicker, the farmers are buying their own farms, instead of being under landlords to a certain extent, and some of the old holdings are being broken up. The Taree Estate is being broken up; the Cundle Estate is broken up, and the Mundrook Estate is being broken up. Taree, the chief town, is double the size it was, and the buildings are of a far better nature. For instance, instead of having the ordinary four-room weatherboard cottage, or plank cottage, they are going in for something artistic.
712. If the chief town has progressed, it is an indication that the district generally has done so? Yes.
713. You look upon it, I presume, as a live district? Yes.
714. As a district which has not seen its maximum settlement, but which is capable of very large expansion? Yes.
715. If the place has progressed during the last few years, in spite of the existing disabilities, how is an impetus to be given to its further progression by the construction of the proposed works;—you have shown that it has progressed, notwithstanding the bad entrance to the bar? It must progress more, if you give the settlers greater facilities to get the whole live and substance of the district (the produce) to market.
716. I suppose the people would like to have an entrance which would admit a decent sized steamer, offering reasonable accommodation for passengers? Yes; I know lots of them who will not take a sea trip, simply because they are afraid of the entrance. They either remain there, or go overland, which is a long trip. The distance overland to Hexham is from 150 to 170 miles. It is a very long tedious journey, and the fare by land is twice the fare by steamer.
717. The greater portion of the stuff is droghered down to near the entrance to the river? It is droghered to the different wharfs and picked up by the ocean-going steamer.
718. You have heard of an agitation, which has existed for many years, for the construction of a north coast railway? Yes.
719. If it became a question of improving the port and having no railway, or neglecting the port and having a railway,—which do you think, in the interests of that district and of the Colony generally, should be carried out? I have no doubt about the improvements of the port being the better scheme.
720. That will always be of more importance than a railway? It will be of more local importance; I do not know about the national importance.
721. Will not the settlers be able to make use of the water carriage at a much less cost than they could use a railway? Undoubtedly.
722. Does not that fact alone determine the question of a railway *versus* a port? That is how I take it.
723. Have the shipping community complained of the excessive rates of freight they have to pay? They have been complaining for a very long time, and they have got up an opposition on various occasions, but it has been too weak for the present company.
724. They naturally suppose that the improvement to the entrance would give them cheaper freights? Yes, and that is the reason which the present company give for maintaining their freights. They charge just the same from the Manning as they do from the Richmond, which is about twice the distance.
725. How does the Manning River rank among the rivers on the north coast? I think next to the Clarence and the Richmond it is regarded as the most solvent and the best river with which to do business, and the best for settlement too.
726. In your profession you would have a very fair opportunity to know the position of the people? Yes.
727. Do you think the financial position of the district is solid? Generally, yes.
728. It has not suffered more than other districts in proportion during the late crisis? No; I think it is the best district up north, excepting the Clarence and the Richmond. I happen to know the Port Macquarie and Macleay districts well, and it is certainly before those districts financially.
729. It is possible that some slight improvement in the river might meet the requirements of the present population, but in view of largely increased settlement taking place there as a consequence of a large scheme

C. M. Boyce.

13 May, 1898.

C. M. Boyce, scheme of harbour works, do you think it presents a case which would justify the state in spending a large sum in carrying out such works? Knowing the value of the district as I do—the fertility of the soil and the resources of the district generally—I certainly do.

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730. Possibly, in the future, when the improvements to all these rivers have been completed, it may be considered by the Government advisable to impose some rate of tonnage on the northern rivers for the purpose of obtaining some revenue to meet the interest on the outlay;—suppose it was a general scheme, which applied to all the northern rivers, do you think that there would be any serious objection to it? I would not like to answer for that, because there is always an objection to taxation.

731. The improvement of a harbour of that character differs very much from the construction of a railway, because from a railway you get a revenue, be it much or be it little, while from an improved port you get nothing;—under these circumstances, if very largely increased accommodation is given to the people, and they thereby obtain a large reduction in freights, do you not think it would be a fair thing to impose some rate of tonnage? I certainly think it would be a fair thing.

732. If the case were presented in that way to the public generally, do you think that they would accept the proposal? I do not think the better class of the community would raise any objection.

733. Is there room in that district for the present population to quadruple itself? I would hardly like to say that. I think there is room for the population at least to double itself.

734. Are the river-bank lands held in large areas—that is, large areas for the Eastern Division? Yes.

735. In areas of 640 acres? No; in smaller areas as a rule.

736. Are they nearly all conditional purchases? They have been conditional purchases, but a lot of them have been paid up.

737. Was it alienated in that way in the first instance? A good many of them away from the towns were, but the towns are mostly situated on old grants. They have been subdivided into farms and sold.

738. But the land generally in the district is held under conditional purchase tenure? Yes.

739. What would be about the average area? I suppose it would be from 150 to 200 acres. Of course, when you go up higher into the grazing parts, up to the high lands of the river, some of them have miles of land.

740. If there is no room for a large population it becomes apparent at once that there cannot be any very large export? There is no doubt that the export could be doubled in time.

741. I suppose that might fairly be expected from the land which is already held? Yes; and you got a better class of farmers up there too.

742. The utmost is not taken out of the land by the farmers as a rule? No; they are the old style of farmers as a rule. Just now there are a few good farmers coming up from the South Coast—a better class of farmers, with more experience.

743. But the settlement which will take place will be above Tarco? Some of it above Tarco, and some on the tributaries below—up the Landsdowne, and in different parts.

744. On the north, how far is the nearest river to the Manning? The Camden Haven, which, I suppose, is distant about 20 miles. There is no steam communication to the Camden Haven; it is only supplied by sailing craft.

745. How do the settlers on the Camden Haven get their produce to market? Some of them bring it into the Manning, and others send it down by sailing-vessels as they come down for timber—ketches and schooners of from 60 to 80 tons.

746. How do they get their stuff to the Manning? They cart it over the main road to Cooperook.

747. Do you think that an improved Manning River would attract much of the stuff from the Camden Haven District? It would open up the lands between the two places considerably more than they are opened up. There is a great deal of land available for settlement between the two rivers.

748. Naturally, the Manning would be the port for that country? Yes.

749. The settlers immediately within the influence of the Camden Haven would possibly avail themselves of the small sailing craft trading there;—is there any land in that direction the trade from which would be influenced by this port if it were made available? Yes. The land, for instance, on the Upper Camden Haven is exceptionally fine dairying land, but it has not been utilised at all, simply because there is no carriage from Camden Haven, and they cannot rely on the steamer from the Manning. They cannot bring in butter and milk, and store it on the wharf.

750. It has been suggested that the Manning would become to a certain extent a shipping depôt for all the trade from a considerable distance around it? Yes.

751. It has not been shown yet where it would come from, and I wish you to show me where the settlement is or can take place? The Johns River, an arm of the Camden Haven River, which runs towards the Manning, is open to a great deal of settlement. The land there is very good; but the few settlers who are there complain of the distance they are from any port of shipment. They also complain that the shipment to Sydney is precarious, and a few of them are thinking of throwing up their holdings.

752. Simply because they cannot get an outlet? It is simply because they cannot rely on getting their produce to Sydney when they want to send it away. They are away from intelligence as to the steamer; they do not know how to catch her; they cannot rely on her trips being regular; they do not know when to bring their produce in to send it to market; whereas if the bar were alright the steamer could make regular trips on regular days, and they could always rely on catching her. It would give a great deal more satisfaction, and lead to a great deal more settlement.

753. It would be a serious thing if these people brought in live stock, fowls, or cows, and missed the steamer; but that objection would not apply very strongly to maize? No.

754. Inasmuch as the settlers depend very largely on their pigs and fowls, they must have a certainty of getting them away when they bring them in from a long distance? Undoubtedly, or else they lose a great deal by it.

755. In some cases it means a total loss? A man who drove in 200 or 300 pigs would find that the steamer had either just left, or that she was bar-bound, or that she had not made the previous trip, and he would have either to leave his pigs there, and pay for their being fed, or to take them all the way back. On the south the Willandra is the next river. It has no direct steam communication. It is about 18 miles to the south.

756. You are aware that pig-raising is not an indication of a high state of farming, that it is generally resorted to by districts which are unable to go in for a higher class of farming, in consequence of being unable to get to market? Yes.

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757. By giving the settlers an opportunity to get to the outside world when they like, and with a degree of regularity and celerity, do you think that this state of affairs is likely to pass away, and that there will be a better class of settlement in the district? I certainly think so.
758. *Mr. Roberts.*] Have not there been numerous wrecks of steamers and sailing vessels in their efforts to enter the Manning River? Yes; the "Brunswick," the "Murray," and the "Fire King" steamers and the "Amy," and the "Trusty," small sailing vessels, were wrecked. Other vessels have got on the bar and got off again. I think the "Murray" was the latest steamer to be wrecked there.
759. Owing to the shallow water on the bar and the really perilous voyage which the people of the Manning feel that they have to undertake, it prevents them from journeying to Sydney to transact their business? Undoubtedly.
760. For that reason an agitation was got up to construct a north coast railway? Chiefly.
761. Was the piece of training-wall, tinted black on the map, regarded as a success by the people with whom you conversed during your visit two years ago? Different opinions were held as to the effect it would have. Some persons thought that it would be a success, and others did not.
762. Did they give any reason for thinking that it would not answer the expectations of the designers? No, except that they did not perceive any great benefit accruing just at the time. The work had not been sufficiently advanced to enable anyone to form an opinion.
763. Is it not a fact that the pilot has to signal to masters of vessels which entrance they had better take? Yes; it certainly is a shifting bar. At the present time the steamer cannot get out till the bar is sounded and the channel defined. The captain does not know where the channel is at present and he is waiting till the bar is defined.
764. Is it not regarded as one of the most dangerous entrances on the coast? Certainly. Next to the Brunswick I think it is.
765. There is no shelter on either side from any of the prevailing winds? No.
766. It has sandbanks on the north and sandbanks on the south? Yes. The rocks on the north side lie too far back to afford any shelter to the bar.
767. When you are approaching the entrance the steamer appears to be going straight on to a beach? Yes; you always have to take a turn.
768. The entrance is scarcely discernible except to an expert? The only way you can tell is by watching the leading marks on the shore, otherwise I could not tell which was the entrance and which was not.
769. Is it not a common occurrence for steamers to be hard and fast on the bar when going in? You very often strike the sand on the bar. I have been on the steamer dozens of times when she has struck the sand and staggered.
770. The steamers have to wait on the sand-bar till a spring-tide comes to enable them to get in? There have been instances of that.
771. Is it not really a frequent occurrence on the bar? Not so frequent now as it used to be, but sometimes they do stick there. The steamer usually waits for the tug; she will not go in by herself now.
772. After they get over the bar which is the next difficulty they encounter? After they pass the Painted Rocks they encounter the Narrows, about a quarter of a mile further up the river. These sandbanks carry a small depth of water.
773. Do the steamers often get blocked there? Very often. Sometimes they have to come down half loaded, to get over the Narrows, and they complete their loading on the outer side of the Narrows; they bring a drogher down all the way with the rest of the cargo.
774. That causes great delay? They lose a tide. It means twelve hours delay, and if there is only one tide in the day it means a day's delay.
775. They cannot always tell when they leave Taree whether they will be blocked at the Narrows, and the passengers and the produce are frequently delayed there for twelve hours? Yes; often. I have been delayed there a day and a half, and at other times I have gone back to Taree in the steamer.
776. You anticipate that by the erection of the training-wall that difficulty will be removed? Yes.
777. Where is the timber shipped at the Manning? The sawn timber is shipped from Cooperbrook and Tinonee. The railway sleepers and girders are shipped from various parts of the river.
778. How far is Cooperbrook from the Manning Heads by water? It is from 8 to 10 miles. It is about a mile and a half up the Landsdowne.
779. Is the Landsdowne River navigable? For sailing vessels up to Cooperbrook. They can go up to Saville's wharf, which is some distance up the river.
780. Is not a good deal of maize grown on the Landsdowne? Yes.
781. Is not the land on the banks of the Manning amongst the finest land to be found in the Colony? Undoubtedly the land on the banks is.
782. It is remarkable for its fertility, and it is capable of growing anything? Yes.
783. Is the land on the Landsdowne of similar character? Yes.
784. On what part of the river is dairying going on? It is carried on right along the whole length of the river now. They have separators up Calligan's Creek, above Wingham. They are carrying on dairying right along the whole length of the river to the Heads.
785. Are many of the farmers giving up growing maize? No; they are keeping on maize-growing and dairy-farming to a large extent.
786. Which pays them the best? They consider that dairying is paying them better than maize just now. They get their returns every month, and always have some ready money, whereas with maize they get their returns only once a year.
787. Is all the good land on the Landsdowne taken up? No, there is land available there yet.
788. I suppose the land on the banks of the river is taken up? Yes; right up to the top of the Landsdowne—as you go back towards the mountains.
789. Do you think settlement will follow the construction of these harbour works? I think that with increased prosperity to the district other persons will be induced to go there and take up the land which is available there, even with a little more carriage to pay than those who are there now have.
790. What sort of timber do they send from Cooperbrook and from Tinonee? Blackbutt and tallow-wood.
791. The Manning River enjoys a reputation for the quality of its timber? The Manning and Camden Haven, and the ridges in between.
792. Is there a sawmill at Cooperbrook? Yes; and one is being erected at Hanging Rock, 4 or 5 miles above Cooperbrook.

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- C. M. Boyce. 793. Is there not a saw-mill at Tinonee and at Scott's Creek? Yes.
794. A large quantity of timber is sent from the Camden Haven? Yes; there are five mills on the Camden Haven.
- 13 May, 1898. 795. What towns are there on that river? Laurieton and Kendall; Cue is on the main road, about half a mile from the river.
796. With the exception of the timber, all other produce is sent by way of the Manning? Either by way of the Manning, or in the trading cutlers or small vessels.
797. These harbour works, if carried out, would be a great convenience and advantage to the residents of Camden Haven? Undoubtedly. All the passengers and all the perishable produce come over to the Manning from Camden Haven.
798. There is a large amount of good agricultural land in Camden Haven? Yes; the famous Comboyne Scrub is at the top of the Camden Haven, where they say hundreds of families could settle if it were thrown open.
799. Is there not a good quantity of wine produced in the Manning River district? A fair quantity.
800. The land is well adapted for the growth of the vine? Excellently.
801. Copernook would be the shipping-place for the Camden Haven produce? Yes.
802. Going up the Manning from Copernook, which is the next town? Croki.
803. There are a good many towns on the Manning with a fairly large population in each of them? Yes, five or six.
804. Is not Croki the centre of a very large farming district? Yes; there is an exceptionally large area of farming-land around Croki, and very high-class land too.
805. Is Jones' Island somewhere near Croki? Croki is on Jones' Island.
806. There you find some of the finest land in the Northern District? Undoubtedly.
807. What is the highest price you have known that land to be sold at? I have known farms of about 20 odd acres to be sold for £600—that is, nearly £30 an acre.
808. What would be its value to-day? I think it is fully worth that, if not more.
809. Going still further up the river, which is the next important town you come to? Ghinni Ghinni, at the other end of Jones' Island.
810. That is also a very important farming centre? There are good farms around it? The Merta and Cundle Plains are around it.
811. The next town is Cundle, where there is a fairly large population? Yes.
812. And numerous farms? Farms all around it.
813. Is that where the well-known Cundle Plains are situated? Cundle Plains are part of the estate on which Cundletown is built; they run to the back of it, and down along the river.
814. Do you know the area of Cundle Plains estate? It was originally one of the very largest grants in the Northern District? It measured 10,000 or 15,000 acres originally, but it has been subdivided and sold to a large extent. I do not know the area of the estate at the present time.
815. Was it not used for pastoral purposes many years ago? A great deal of it is so used now, and a good deal of it is under cultivation.
816. Is the land well adapted for agriculture? It is splendid land; it only wants a little draining.
817. There are very fine farms on what is known as the Upper Landedowne? Yes there are good farms out there. They draw to Cundle or to Savill's wharf. They send all their produce by way of the Manning.
818. From Cundletown you come to Taree? Yes.
819. Which town is regarded as the capital of the Manning? Taree.
820. Do you know the population of Taree? I think it is from 800 to 1,000.
821. How many banks has it? Two—the Commercial Bank and the Bank of New South Wales.
822. For many years Taree was the head of navigation? For a great number of years.
823. How far do the ocean steamers go now? Up to Wingham, which is about 32 miles by water from the Manning Heads.
824. These harbour improvements, if carried out, will be an advantage to people along the banks of the river, and further up for a distance of 30 miles by water? Yes; but Wingham is the shipping port people at least 25 or 30 miles above that. They come down all the way from Tiri.
825. All along this river the land is capable of growing anything a farmer may wish to grow? Certainly.
826. And all along the river is a settled population? Yes.
827. And every few miles you come to a township? Yes.
828. After leaving Wingham, there is very fine land on the Upper Manning? Some of the best land is up Woodside way. Perhaps the most productive soil on the river is comprised in the Woodside and Maryville Estates.
829. Are there any very old estates up there which have been devoted to farming for very many years? The Woodside Estate, Maryville Estate, Mount George, and Black flat land.
830. When entering the Heads, which are the most dreaded winds that have to be encountered? The south, south-east, east, and south-west winds.
831. There is no shelter of any kind? There is no shelter of any kind from those winds. You do not want shelter from the west winds, because they are usually calm winds.
832. When a steamer from Sydney is unable to enter, where does she take shelter? It all depends on the wind. With a south wind she would take shelter at Cape Hawke, or if she had got past there, not knowing that she could not get in, she would take shelter at Crowdy Head, which is 18 miles away.
833. She could only get shelter there in a southerly wind? If it came on to blow from the east she would have to go. It is a straight headland which shelters a vessel from the south wind only.
834. The steamer could not get in at Cape Hawke? No; the bar is too shallow.
835. Do the people expect both the railway and the harbour works to be carried out, or would their interests be served by carrying out the harbour works? I think their interests would be served if this scheme were carried out, and it were effectual.
836. If given a good entrance, it is fair to assume that all the produce, at any rate, the produce grown on the banks of the river, would go by steamer? Yes; except when there is a gale such as we had during the last few days. As a rule it would go by steamer.
837. Do you know the other rivers on the North Coast? I know the Hastings, the Macleay, the Willandra, and the Camden Haven.

838. Do you not think the time has arrived when something ought to be done for the settlers in these districts? Certainly I do. C. M. Boyce.
839. What other rivers run into the Manning? King Creek, the Dawson, Scott's Creek, the Cedar Party, and Dingo Creek. 13 May, 1868.
840. Is the Dawson navigable? No; they do not go up the Dawson.
841. To which shipping place do they bring their produce? On the Cundle side, to Cundle; and on the Taree side, to Taree.
842. All along the banks of these creeks there are very fine farms? Yes; for a good distance up.
843. And all round Tinonee, between Taree and Wingham? Yes.
844. Do the ocean-going steamers call there? Yes.
845. Going from Hexham, and crossing the river at Tinonce, about how many miles is it from the other side to Taree? Tinonee is 3 miles from Taree.
846. Does not a very large traffic cross there? Yes; it is the main North Coast road.
847. Is there a bridge over the river? No; a punt.
848. They have been asking for a bridge for many years to accommodate the large traffic along the road? Yes.
849. When you get across to Tinonee, is not the land from the Manning River up to the town of Taree of a very high-class character from an agricultural point of view? Yes; that is, the Taree estate. It has been subdivided and sold lately.
850. Used it not to be leased to farmers? Yes; they used to get a rent of from £1 to 30s. an acre for it.
851. Was it sold by auction recently? Some of the estate was sold by auction during last month. I do not know the price it fetched then, but I know it fetched £25 an acre some time ago.
852. *Mr. Black.*] How large is Jones' Island? Driving across the island, it is from 3½ to 4 miles across one way, and I suppose it is from 2 to 3 miles the other way.
853. It is all fit for farming? I think it is the best bit of grazing land on the North Coast. It is exceptionally fertile. It is one fine alluvial flat surrounded by water—the Lansdowne, King Creek, and the Manning.
854. The estimated cost of the complete scheme is £223,500, but Mr. Darley thinks that by reducing the length of the breakwaters and the training-walls, the cost might be reduced to £160,000, in addition to the £20,000, which has been spent on the northern training-wall;—do you think there is any justification for expending that large sum to improve the entrance to this river? I do. There are a considerable number of settlers up there. I have travelled over a great deal of the Colony, and I really think the land up there is about as fertile as any land in the whole of the Colony.
855. Do you think that these works, if carried out, would merely afford an entrance and an anchorage for the steamers, or would it permit them to go up the river and collect their freights? They go up the river as it is. It would not make any difference, so far as that matter is concerned, except that they would be able at all time to cross the Narrows.
856. I understood that there are several shallow flats on the river? There are; but the steamer manages to get past them. The worst sand flat is between Pelican Bay and the entrance; it is one mass of shifting sand, and occasionally a steamer cannot go over it until she is lightened.
857. How do you account for the presence of the Narrows there;—where does the loose sand come from? It is owing to the sandy formation of the country.
858. Do you think it is caused by the scouring action of the tide over the sandspits? They have been there for years. I think it is owing to the nature of the country.
859. Where did it come from? I think the sand was there before the river broke out. I do not think that this is the old entrance to the river; it has two entrances.
860. You have had a flood many times, which would have cleared it out;—it must have been renewed surely? The flood would carry out, and the sand on the bar too, but a heavy easterly wind draws that sand in and increases the Narrows.
861. You think these shallows inside are caused by the easterly gales? They are kept up by them. I could not say they are all caused by them. It must be from a quarter to half a mile across there. It is one vast deposit mass of sand. The river flows over the top of it to a depth of only 2 or 3 feet in places. In some places it is dry at low tide.
862. The Department are of opinion that by the erection of these training-walls which would narrow the channel, the tide would not only scour out the channel, deepening it, and removing the shifting sand banks in the Narrows, but would also effectually remove the bar? It would narrow the rush of water to at least a quarter of the space it occupies. If the tide is confined to a small space it should have the effect of scouring the entrance and the Narrows.
863. Does the water break over the part where you see it is proposed to put a rubble stone facing? I do not think so. As far as I can see the object of the engineer in proposing to put a rubble stone facing there is to break the rush of water coming down the river in flood time. Certainly the water does not break over there.
864. Have you formed an opinion as to what kind of works are necessary for the improvement of the river? I think that is the best class of work which is shown on the plan.
865. Do you think these training-walls will be effectual without the breakwaters? That is a matter entirely for an engineer to say. I should not like to hazard an opinion on that matter.
866. You could not say whether, without breakwaters, there would not be a danger in times of heavy weather of sand which accumulates at the entrance, and which is covered at high-water being scoured away by the tide and deposited in the channel? No; I think it would be scoured and carried too far off to be any danger there. The great rush of water would scour the sand out for some distance.
867. That which is caused by the gale may be immediately removed by the floods, but they may not occur coterminously? They may not come together.

TUESDAY, 17 MAY, 1898.

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (VICE-CHAIRMAN).

The Hon. JAMES HOBKINS.

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.

GEORGE BLACK, Esq.

FRANCIS AUGUSTUS WRIGHT, Esq.

FRANK FARNELL, Esq.

The Committee further considered the proposed Harbour Works at Manning River.

Henry Richard Carleton, Principal Assistant Engineer, Harbours and Rivers Branch, Department of Public Works, sworn, and further examined:—

- H. B. Carleton.
17 May, 1898.
868. *Mr. Hoskins.*] Have you visited the Manning River recently? Yes.
869. Did you find that the works which have been undertaken by the Department were answering well? Yes, fairly well. The inner portion of them was rather successful. There was rather a large sandspit accumulating on the southern side of the northern training-wall.
870. Is that large sandbank between the training-wall and the entrance increasing? No; it is much about the same. I reported the matter to Mr. Darley, and asked him to put on a dredge to dredge along the wall, and endeavour to induce the current to follow the line of the wall.
871. Do you think that when the works at the entrance are completed, you will be able to remove absolutely that obstruction to navigation—the sand-bank—between the proposed breakwaters? I think we will get it out long before the work is completed.
872. Had it diminished a little before the last gale? I do not know that it had. It extended in a southerly direction from the present north training-wall across to what I may term the channel, to about half-way over to the wreck of the "Murray."
873. Do you think that the sand-bank must be dredged away; that the scour caused by the training-walls will be sufficient remove the sand? I think it will be desirable to assist the scour by dredging, at any rate, along the wall, and induce the current to run that way, and having once put a cut through there, I think the current will remove the rest of the spit.
874. When the sand has been disturbed by dredging the probability is that the flow of the water of the river will carry away more? Yes; once a channel is dredged along the wall parallel to it, and a cut is made through there, I think the tidal action will remove the rest of the stuff on the southern side.
875. The opinion has been expressed by Mr. See and others that the entrance to the Manning is about the worst on the north coast;—can you say, as the result of your recent visit, that the work which has been undertaken has made the entrance more easy of access and more safe; that it has given a greater depth of water? It is not sufficiently far extended to improve the bar yet. It has improved the inner crossing decidedly.
876. Where did the recent gales cause damage to the works? The waves went right over the wall, and washed some of the top off.
877. Do you intend to prevent that from happening again by increasing the height of the wall? I think that will be the best thing to do.
878. If you do increase the height you will back it up by filling in with the sand dredged from the river? Yes; anything we dredge there will be pumped over the wall, and will help to support it.
879. Did your recent visit confirm you in the opinion that by the expenditure of this money the entrance to the river and the navigation of the river would be improved? Yes; I think we are working on the right lines to create a fairly safe and navigable entrance.
880. And to give a fair depth of water in the channel up the river? Yes.
881. Have you received any report from the local officer as to damage caused by the recent gales? We had a telegram in regard to the Manning, in which we are informed that the sea came right up to the entrance, and cut some of the top off the training-wall. About 1 foot of the wall is already replaced.
882. Have you heard whether, during the recent storms, vessels were afraid to enter in consequence of the roughness of the sea at the entrance, that the work which has been carried out did not offer them a sufficient guarantee of a safe entrance? I do not think any vessel would have attempted to enter the Manning during that gale, especially when they are so close to Port Stephens.
883. *Mr. Roberts.*] Will you explain the difference between the work suggested by Sir John Coode, and the work which is now proposed by the Department? We do away with the wave-trap which he proposed. Instead of continuing the north training-wall as shown on the plan, and forming a northern breakwater in that way, he proposed to go off the northern beach with his breakwater, and form a wave-trap over that portion of ground marked by the wreck of the ketch "Amy." Our present proposal does not extend either of the walls nearly so far as Sir John Coode proposed to do in his scheme; but the completed scheme is very much on the lines of his scheme. The greatest variation is the omission of the wave-trap. Another very important difference is the extension of the inner training-wall up stream. That is not included in his scheme. It is a very important part, I think, in connection with the harbour works, because it prevents the current running along the northern bank, it contracts the river channel.
884. What is the Department's estimate for the completed scheme? £99,800.
885. How much money has been spent there by the Department? About £23,000.
886. How much is it now proposed to spend? Practically £100,000, in addition to what has been spent.
887. Does that include the cost of the two breakwaters? No; to construct the two breakwaters we would require £81,800.
888. The entire scheme would cost about £180,000? Yes.
889. Will these two breakwaters be found absolutely necessary in the near future? I think not. I think we will get a sufficiently good entrance by the construction of the walls shown by full red lines on the plan.
890. What depth of water is there on the bar, and what increased depth do you expect to get? There is very good water, so far as the walls have been constructed, right along them all the way and for some distance

H. R.
Carleton.
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- distance beyond the influence of them, but the bar is no deeper now than it was when we commenced the work.
891. How deep was it when you were there last? I went out at high-water. I daresay there was 6 or 9 feet at high-water.
892. What depth do you think it would be fair to expect that you would get for the works? Twelve or 14 feet. Probably we would get that depth at low-water.
893. That would give ample water for a larger class of vessel? Yes, for a better class of vessel than is running there.
894. Is not the Manning one of the most difficult entrances for shipmasters to negotiate? It is a nasty one. The headland is on the northern side, and there is no protection from the southward. It is at the northern end of a bay also, and it receives the full sweep of the sea across that bay.
895. Is it not just like approaching a beach? Yes; it is somewhat similar to the Richmond in that respect. Each of them has a headland on the northern side, and both are equally bad bars.
896. Is it true that the pilot has to signal to masters of vessels telling them which entrance to take if there is more than one entrance;—does it not shift about in a mysterious way? Yes. The pilot finds out where the best water is, and he erects leading marks on the shore for the guidance of vessels entering, but a great many of them use the tug now.
897. An entrance does not remain stationary for any lengthy period? That is quite correct. It fluctuates, but not so much since the northern wall has been constructed. I recollect when the entrance was to the north of where the wall is at present. It can never come there again; we have driven it further south.
898. Do the Government subsidise a tug for the Manning? Yes.
899. There is a large traffic in timber by sailing crafts? Yes, to all the rivers. I think thirteen sailing vessels came out of the Camden Haven only the other day.
900. *Mr. Lee.*] How long had they been there? They were detained there by the late bad weather.
901. They must have been there for a fortnight? Fully that.
902. *Mr. Roberts.*] In anything like an easterly gale, it is a common thing for vessels to be detained for two or three weeks in the northern rivers? Only in case of a gale like the one we had last week.
903. That was an exceptionally heavy gale? Yes. They do not have any very long periods of detention now.
904. Having got over the bar at the entrance to the Manning, is there not some difficulty in getting past what is called the Narrows? I explained I think just now, that our work inside the bar has decidedly improved the inner crossing, but is not sufficiently far advanced to improve the depth on the bar. The Narrows are decidedly better than they were.
905. Having got over the Narrows is there a fairly good depth of water in the river? You can go straight to Taree then, a distance of 19 miles.
906. From Taree can you go to Tinonee and Wingham? You can go to Wingham. It is not quite so good above Tinonee; it is rather bad at the back of the island off Taree. There are one or two bad spots up the river. The coastal boat goes to Wingham.
907. Constantly? I think she goes invariably now, and if she does not, it is not from lack of depth of water; it is simply to make the round trip in a given time that it stops at Taree. The river has been well dredged between Tinonee and Wingham.
908. *Mr. Lee.*] A question has arisen as to the probable cost of the stone for these works. You have estimated what the cost of the stone is likely to be per ton; but so far we have not been able to find out that the stone can be obtained for that money. Will you explain where you propose to get the stone to carry out these works, and under what circumstances you put it down at not exceeding 4s. 6d. per ton? The stone for the Manning River works is obtained from Crowdy Head, a headland about $4\frac{1}{2}$ miles north of the entrance to the river. It is excellent stone, and there is any quantity of it.
909. To which head will you have to make a tramway? There is a tramway in existence; it is the property of the contractor. Our contract rate for depositing stone there at present is 3s. 9d. a ton.
910. Is that the price for landing it, or for placing it on the works? That covers everything. We pay 3s. 9d. a ton when the stone is deposited in the wall, and not till then. It has to be up to a certain standard. Every ton of stone is passed over a weighbridge, and weighed in a truck.
911. Of course it is supplied in sizes, according to your instructions? That is regulated by the inspecting officer. If it is not up to our standard he rejects it, or puts it into a lower class.
912. Your arrangement is to pay so much a ton for suitable blocks placed in position, not so much a ton for what is taken out of the quarry? No; we pay for the material deposited in the wall.
913. That price will include the use of the tramway? It is a contract at the Manning, and the contractor has to find the plant himself.
914. Suppose you could not get on with the contractor, and you had to make other arrangements, where would you be then? We would start in and do it ourselves a little bit cheaper than he is doing.
915. There would still be a tramway to construct? It is probable that we would have to take over the present tramway from the contractor at a valuation, or let him take it out, and we would put in our own.
916. Suppose that by subsequent events you were compelled to take it over, would it necessitate any large addition to your estimate? No; it would be covered by our rate per ton. That rate per ton covers the cost of all plant, the construction of lines, the quarries, or the construction of punts and steamers if we find it necessary to bring the stone by water.
917. For some portions of the work you will have to take the stone by water? Yes, and you will find in the estimate that the rate per ton is increased for the double handling. The rate for the material in the southern walls is somewhat higher than the rate for the material in the other work.
918. As a matter of fact, one rate is only 2s. 5d. per ton for a length of 1,287 feet? That is our actual rate with the present contract for similar stuff used in the wall. If he can do it we can do it at the same price.
919. You are estimating that these works will take so much stone at so much a ton; but suppose you are out in your calculations, and you find that owing to the depth of the sand, or to your getting into deep water, it will take 50 per cent. more stone? I do not think the depth of the sand has anything to do with it, because as soon as we find that it scours down to a certain depth, we take care to prevent it going any further.
920. You cannot prevent a certain quantity of stone being swallowed up? Our estimate is a very liberal one. We allow for scouring down to 12, 14, and 16 feet; in some places, 22 feet, perhaps.

H. R.
Carleton.
17 May, 1898.

921. Your object is to get a certain depth, 12 feet, and possibly 16 feet? Yes; but in preparing the estimates there are many places where we allow for the wall scouring very much deeper than that.
922. At times there is a very great displacement of sand;—what percentage of stone have you allowed over and above what would be sufficient if there was no displacement? We had a line of soundings along the line of the wall, and then we estimate that perhaps, 2, 3, 5, 10, or 15 feet of sand along the line of this wall may scour out, and we allow for filling up from that up to our level of 2 feet above high-water, or whatever the wall is fixed at.
923. That is as deep as you think the scour is likely to be? Yes; they are always very liberally made. We allow for scouring out deeper than it generally goes.
924. Do you think it is possible for a work of this character to involve an expenditure similar to that which happened at the Hawkesbury when, instead of, as they thought, a few thousand tons of stone filling it, it took nearly 1,000,000 tons, owing to the displacement of the mud? I do not think a similar thing is likely to happen in carrying out harbour works. I do not think such a formation could exist in any of the rivers. If we had such soft material as that, instead of having a deposit of silt it would all scour out; you would have a big hole there. In the case of the Hawkesbury River there was no tidal action, and therefore there was no scour to remove the mud. There is not the slightest probability of our meeting with such a thing in carrying out these harbour improvements. If there was such material in the rivers, we would have deep water instead of the bars we have.
925. You are prepared to give the Committee your assurance that a very liberal estimate has been made over and above actual requirements, to provide for a contingency of that sort? Yes; we estimate to scour down to at least the depth we hope to get in the channel.
926. What do you allow in your estimate to cover contingencies—10 per cent.? No; it is the estimate of quantity which is taken out very liberally. There is no percentage added in that way. After having estimated that it will scour down to, say, 15 or 20 feet below low-water, we take out the solid contents of a wall constructed over that line, and then we deduct what is called a fifth over from that. That gives us the quantity of material in that wall. As a rule, we find the scour is not as great as we anticipated, consequently we save a great deal of material.
927. I presume there would be conditions in some places where the scour would be very great? Yes; and when that occurs it is never of any great length, because we immediately check it by putting the small stone from the quarry over the bottom, coating it and preventing any further erosion.
928. Can you draw a comparison between the works which have been completed on the Tweed River, and the proposed works on the Manning River;—are they in any way similar? In the case of the Tweed and the Manning they are very similar.
929. You are aware that training-walls of great length have been constructed on the Tweed with very small stones, and those walls appear to have stood remarkably well? Yes.
930. Are you in a position to say whether there will be as much or more scour here than there is in the Tweed River? There will be more scour. I do not think we will be able to put the stone in the work as cheaply as we did there. We had a remarkably good quarry at the Tweed.
931. Do the conditions on the Manning differ so much as to lead us to suppose that works which have been successful on the Tweed will not be successful there? No; we will get exactly the same results on the Manning if we construct the walls.
932. Is it a fair assumption that if the work on the Tweed has stood well and answers its purpose, a similar work will also do so on the Manning? Yes; I think, if anything, we can allow for a somewhat better result on the Manning, because the watershed is bigger and the river is larger, and we have more flood-waters to assist us.
933. I presume you will use medium stone for the inner portion of the training-wall and larger stone for the rest? Exactly; we will never be able to put in the stone and maintain the works as cheaply as we did on the Tweed. On the Tweed, the quarry was simply a heap of road metal, and we only had to take it out. I think it ranged from 1s. 11d. to 2s. 1d. a ton for the work in the walls at the Tweed.
934. Can we safely take that as an evidence of what can be done by using small stone for inner training-walls? You can rely on that.
935. Would the peculiarities of the configuration of the stone in any way account for the success of the work on the Tweed? It would be a great mistake to use the water-worn material in any of the walls. It would be a mistake to use any boulder-shaped stone at all.
936. The stone which would come out of your quarry would be blasted out, and, consequently, it would have irregular faces? Yes; it is a solid mass of rock at Crowdy Head.
937. The stone will not be dressed in any way? No random stone.
938. You find that the best for the purpose? Yes; it interlocks itself.
939. Is it basalt at the Tweed;—what is it at Crowdy Head? Vitrified sandstone.
940. Will it fracture in the same way? We shoot it up. We take the large blocks to the large works; and the small stuff which is made by the shooting goes to the inner wall.
941. Do you think the Committee will be on solid ground if they take the works at the Tweed River as an object lesson as regards the design, the class of the effectiveness of the works? Yes. We will get deeper water in some cases than we got at the Tweed. We will get a better scouring power. They have a fine rainfall at the Tweed, but the watershed is not the same there as it is in the case of other rivers.
942. You are obtaining excellent results inside the bar of the Tweed? Yes.
943. By carrying the training-walls down to a certain distance, but not to the rock? We could not get out on the bar with that material; we would have to go to another quarry to do so.
944. Is it not a fact that in heavy weather a tremendous sea beats over the walls in the lower portion of the Tweed? Yes.
945. Yet they have stood it? Yes; but it would not do to go much further out on that assumption.
946. Do you propose to go closer to rough-water than you did at the Tweed? We do not allow any stone under 4 tons in the north wall at the Manning. At the present moment that is our contract.
947. You ought to obtain similar results here by using larger stone? Yes.
948. Do you think that the design could be improved upon? I could not improve upon it. Mr. Darley thrashed it out as fully as it could be done. I do not know whether anybody else could make any other suggestions.
949. Are you satisfied that it is a design which, if carried out according to the proposal, will give permanent

A



21054

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

PUBLIC WORKS BUILDINGS,

PHILLIP-STREET,

SYDNEY,

Model

*Transcription of Shorthand-writer's
notes of evidence, - To be ^{numbered and} printed, &c.*

24

A 1

HARBOR WORKS AT MANNING RIVER

62/

Thursday June 2, 1898

The Ctee met at the Court House, Taree

Present -

Francis ~~Wright~~ August Wright Esq, *Templeton*

The Hon Daniel O'Connor

Ma Thos Henry Hassall Esq

John Lionel Fegan Esq

George Black Esq

The ctee further considered proposed harbor works at Manning River

John Thomson, storekeeper, and mayor of Taree, sworn

and examd -

959 *John*

Temporary Harborm - You are aware that there is a scheme

for the ctee to construct certain works at the entrance to the *Manning* River,

If you ever examined a plan of the works as proposed by the Engineer in Chief -
partly Sir J. Doole's scheme but with a modification of it? I have visited
the place and I have a personal knowledge of the work not being carried on.

63

I suppose that during your long residence in Taree you had
had occasion to go occasionally to Sydney by steam? I have

75

964
 If you ever exper^{ien}ced any difficulty in going ~~out~~ out of the river and come in? There is considerable delay at times and the crossing of the bar is always carried out with a large amount of difficulty and considerable danger, and always there is an amount of uncertainty

65
 What class of steamers visit this place? The Coraki is the regular tender. She is one of the fleet belonging to the N. O. Co., and she is exchanged at times for other boats as occasion arises

66
 Do you know what water she draws loaded? About 7ft 6 in, loaded, I think

67
 Could a vessel of larger tonnage come into the port with safety? Not now

68
 What are her freights from here to Sydney? Coal is carried at the rate of 10s a ton

69
 Includes crew charges? Yes

A 3

970

And the return freights from Sydney? Dead weights
 12s 6d; other weights are calculated on the basis of 15s per ton
 measurement. The measurement rates are most unsatisfactory, they are
 very erratic and consequently a great deal of friction arises about the
 charges. They never book any parcel ^{at} less than 1s.

71

What do they charge for crates of poultry and things of
 that kind? For Poultry they charge 4d per pair, the consignees
 providing their own coops. You can put as many in a coop as you
 like

72

Eggs and things of that kind? Eggs 1s and 1s 3d
 per case according to size. A 1s 3d case would hold about 36 doz

73

Do you consider those freights high? As compared
 with other rivers they are high, ^{but} ~~and~~ ^{every} ~~reason~~ reason to
 believe that in the event of better facilities being introduced they
 would be reduced

24

97
97 +
Proctor
Hilson

A 4

Do you think that if the bar were deepened and a better class of vessels could visit the river, you could obtain a reduction of the freights? Yes; I think on the authority of the company.

75
Is a reason for the comparatively high freights the difficulty of navigation? Yes, and the rate of insurance.

76
Can you tell me the average depth of the water on the bar? We have two difficulties at the entrance to the river. There is what is known as the bar which is the direct crossing from the ocean into the river, but half a mile farther up there are the narrows or sand flat inside, and when the bar is deep the narrows inside, as it is now, are very shallow. Last week there were 11 ft on the bar and only 6 ft 9 in. on the narrows.

77
Is the seasonally reversed? It is always reversed. When the narrows are deep the bar is shallow.

78
Can you mention any assignable cause of it? Only the effect of the wind, and there is a considerable quantity of drift sand.

28

on t place occasnd by ~~river~~ t tugs and tides

977

It arises fm various causes o wh you do not know *Call*

t details ?Yes

80

T portion o these works wh it is now proposd to carry out is to cost, practiclly, £100,000, wh is a large sum o money to spend on t improvmt o t river ; supposg tt t pple o t M^gng hd their choice o havg £100,000 spent on t entrance to t river or havg t proposd ry constructd, wh do you think they wd select ?*Requestn is hardly a fair one, becse £100,000 spent on t bar, I presume, wd mean t completn o t works at t bar.*

Par) 81

acces to make an entrance w 12ft o water ?*t being so, £100,000 wd go no way in't constructn o a ry.*

82

It is not a questn o respective costs, but suposg tt t alternative w^d be put to t pple o t district *if you prefer a ry constructd to M^gree or yr river mde navigable w a depth o 12ft o water on t bar,* wh wd they select ?*makg t district as a whole and t intermediate district ^S wh a 2y to M^gree wd serve,* I think ttt grtst good f t grtst numbr wd be givn by t ry.

24

783

There can be no doubt that, whatever may happen to the
 Mang and ~~the~~ ^{this} district, the govt of NSW are morally bound to give
 a proper outlet ~~by~~ ^{by} the river for its trade - I think it is inevit-
 able; do you take the same view as I do, that no matter ~~what~~ ^{how} else
 may be done, the work should be carried out? Yes. I said this morning,
 when giving evidence with reference to the proposed ~~by~~ ^{by}, that there are a
 number of people on the river who can be served only by water and our
 present situation is that we are entirely ~~cut~~ ^{cut} off from any centre
 when the ~~bar~~ ^{bar} impedes navigation.

84

In fact all the lower part of the river - Cooperbrook
 and around there - can be served only, as things now exist, by
 water? Yes

85-

And considering the aspect of the question alone, you think
 that the govt are justified in spending the money at the ~~entrance~~ ^{entrance to the river} and the people
 are perfectly justified in asking for a fair means of access, so that
 there may be no ~~obstacle~~ ^{obstacle in the way of} communication between them
 and the people of the colony,? Yes

80

986
Higgins

A 7

I suppose you know nothing technically ~~about~~ t works ~~that~~

you do not profess to be an expert in any way? I know nothing
fur ^{what} ~~ther~~ than I h noticed as a layman and ~~wh~~ what I h heard fm
other pple

54

What are t generl comments on t proposed scheme?

T generl comments fm persons whose opinions I think are
worth considering are to t effect th t works being carried out
at t heads at t presnt time, being on t northern side, are not
likely to be efficient and th no complete entrance will be mde
and t improvmts will not be anything like efective until t southern
brkwater has bn constructd

88

It is t contentn o those pple whose business
it is to watch t place, "Yes, pilots and other men continually
on t spot

89

They contend th wt t constructn o t southern brkwater
a perfect entrance can ^{not} be mde? "Yes

90

Why do they assert th ~~th~~ ^B cause all our bad weather comes

51

21054

As.

for the south and S. E., and when the wind comes from the south ^{or} ~~the~~ S. E.
 it backs in sand and closes up the entrance. ~~The~~ ^{The} south beach is
 more exposed than the north. There is a natural breakwater on the north
 in the pointed rocks. I may say that the beach extends very much
 farther east than the pointed rocks, and the works on the northern
 side have done this amount of good - the channel does not work northward
 at certain seasons of the year, ^{when} ~~the~~ winds vary, as it used to do.
 The wall so far as it has been extended has had the effect of stopping it,
 and now the same service is required on the southern side. ~~the~~ ^{the}
 easterly gale two or three weeks ago had the effect of carrying away
 a large amount of the south beach, and some of the timber that had grown
 on it was swept away, and there is every probability of another
 channel breaking out, which will mean that instead of being ^{even} ~~as it is~~ ^{now}
~~now~~ ^{even,} a wide entrance and shallow ^{it} ~~will~~ ^{will} be still
 wider and consequently more shallow.

991

The present idea is to confine the river with certain
 training walls and thereby effect a scour by having a narrower
 body of water with more velocity and greater force of current

52

so as to permanently keep the bar scoured out? The idea is accepted by all, and watching the matter here, too.

99- [But ~~the~~ local residents think that it will ~~not~~ ^{not} effect the entire object unless the southern breakwater be carried out? Yes.

The water cannot be confined with the southern breakwater.

93 Do you know if the complete Scheme is estimated to cost £220,000, if all the works be carried out as shown on the plan, but the officers of the H & R Dept advise that it by the expenditure of £100,000 a good permanent entrance, with about 12ft of water, will be obtained; you say that the local people who know something about it are doubtful about it? I say that it depends on where the money is to be spent.

94 It is not going to be spent on the breakwater on the southern side? Then I am of opinion that though it will help materially it will not give a perfect entrance.

95 As far as your knowledge goes, by the inside works you will not obtain the satisfactory result which the departmental officers

Q 10 .

anticipate? Just so. The work as it is being proceeded w shows
that the scour is forced on the southern side which is always considered the
most dangerous part of the navigation.

996

Your contentn is that the brkwater^S, especially the southern
brkwater, must be extended to make the entrance a perfect one?

It is my contentn

997

You tell the chief^{of} information you have received from people
resident on the spot and also from captains and others, ^{that} unless the
southern brkwater ^{especially} ~~is~~ be carried out, they do not think that the
object of making a good entrance will be secured? Quite so

998

Mr Black - Do steamers of any size ever come up to the
town of Three? The boat that trades to Sydney always comes to Three.

999

The "Electra" is it? No; she does not come to
Three now; she had to go away on account of the shallowness of the water.
The "Coraki" is coming here now.

34

A 11

1000

What does the "Electra" draw? I think 8ft or 8ft 6

1

And the "Coraki" draws abt 6ft, does she not? Abt 6ft 6 in.

She can carry 1000 bags ^{of maize,} I think, and draw 6ft 6 in.

2

Do you know that we have it on the sworn evidence of an engineer that with a little dredging you could have 12 or 14 ft of water all up the river as far as Taree? I have not heard that, but I submit that that evidence does not bear on the case because the proposed work will not affect the navigation of the river farther than a mile from the entrance.

3

If, with a little dredging, a steam drugg from 12 to 14 ft could come up the river, and if, with the construction of harbor works, the bar could be so removed and the channel deepened that a vessel drawing 12 or 14 ft could enter almost at any state of the tide, then obviously if your trade warrants it that the bar being removed and a dredge being as I understand it will be permanently kept in the river that you will have vessels drawing from 12 to 14 ft coming up to your town if those improvements be made; do you not think that under such circumstances the passage

~~Hodgins~~
~~Hawkins~~

a 12.

by sea ^{h^d} ~~loss~~ many of its teachers of passengers and of your goods
~~will~~ ^{can} be more speedily and more ^{h^d} ~~certly~~ ^{certly} taken to market than
they are now? ^{h^d} ~~certly~~ they ~~will~~. As part of my evidence I shd like
to submit a copy of a return of the exports of the district as com-
piled from a reliable source, ^{showing} the imports of the trade and the
exports from the river. These have been carried away by steamers and
are a fair example of what the exports are each yr. This return
is of 1897 : —

56

Ricketts

George ~~Harris~~, master mariner, Taree, sworn and

exd -

1004. Temple Chairman - You are ^{the} local Manager f t N C S Co? Yes ^{S.}

5-

Mr O'Connr - How long h b you bn on t river,? I h b
bn stationd on this river as Manager f t steamshp compy 25yrs
last April .I hd bn tradg here previously.I came here first
in t yr 1862 whilst I was tradg on t coast. ~~My~~ first
trip to this port was in comand e a sailg coastl veal .

6

H you bn connectd w t port ever since ?I first
taded here f 10 mos in 1862, and I ~~o~~ traded here off and on
aftrwds

7

Are you t local mana ger f t compy e wh Mr John
See is one e t directors? Yes

8

Wd you kindly w yr experce, give t ctce t benefit
e yr opinioe w regard to t proposl new haf us ? I think tt t
trainig wal l hs gone out suffictly far at t presnt time on t
north side, but I think it wil be totallly useless unless t

Handwritten: ~~Harbour~~
~~Harbour~~

As southern brkwater be constructed ~~all you may say~~

1009

Will you say why? The water coming down from Pelican Point at the present time is ~~cutting~~ cutting away the dry sand spit on the extreme end of Mitchell's Island on the south side, and I believe that when a flood comes down it will cut it away a great deal more. I have seen all the sandy point disappear before. Then there is a possibility that both the north ^{can} brkwater and the inner training wall there now will be sanded up.

1010

What is the effect of the work already completed? The

effect of the outer brkwater has been to bring the channel a long way south; it has brought it into its original position years ago, and I believe it has deepened the water on the outer bar.

11

If the proposed training wall on the south ^{side} be carried out to the extent of the firm red line, will not that be most efficacious for the present? Yes. The sand flat on the north end of Mitchell's Island, on the south side of the channel, is a dry sandbank, and at the present time it has gone into a flat, and the high water flows right over the point into the river. Where it used to be a high sand *flat*

89

16.

previously it is cuttg away. In almost all bad weather we h
hd it has been cut away bef, but it makes up again into a
dry flat

1012

The gist of yr evidence is that the northern extension wd be
altogether useless unless the southern work be completed? I think
it wd be useless wth the southern portn.

13

But if the southern trading wall be erected to the first
reached point, it ~~will~~^{wd} produce something like the results anticipated
by the report? I believe it wd.

14

And it wd be safe for the navigation of steamers up to 300
or 400 tons? Yes. I think it wd command at least 12ft of water.

15

Mr Fagan - What is the average depth there? At the
present time there is abt 9ft on the bar; sometimes it is only
6ft^{in.} on the bar. We have had for a long time 6ft^{in.} and 6ft^{in.} and have had
to go out only partly loaded.

40

1016 Is any dredge work there at present? No

17

Therefore it is allowed to silt up? It shifts every day; in fact the inner flat shifts *at* present time almost every hour. A vessel can now get to the flat point opposite Mitchell's Island, but then drops into ⁱⁿ 6ft 6 or 7ft of water at high water.

18

How do you manage to get up at low tide? The ocean steamers can ^{not} cross anywhere there at all ^{at} low tide; it is only the river boats that can cross there. There is ⁱⁿ about 6ft 9 ⁱⁿ ~~water~~ this morning at high water at that particular spot.

19

But the ocean steamers can come up to the flat opposite Mitchell's Island at low tide? Yes, just inside - up to the training wall.

20

After crossing it, how far from there can you come up towards the area at low tide? If you cross it you can come right up to the area with plenty of water.

21

What is the width of it? It is an immense sand flat with

41

~~Franklin~~
~~Admiral~~

A 18

little channels. There is one little channel running down to the
~~head~~ ^{heads} on the east side of the flat. It is all in little crooked
channels. There are no defined channels at present.

~~From the flat opposite Mitchell's island where a vessel~~

1022

There is half a mile of sandbar there? Yes

773

In reply to Mr O'Connor you said that the work that has been
carried out by the Dept up to the present time has made the channel
much deeper? Yes, on the bar itself.

774

Or, in other words, it has given a better ^{scour} ~~scour~~ than
there was previously? Yes, on the bar.

785

But the work will not make a good approach until the
southern training wall is completed? Yes; and the

goon

And the northern training wall ~~will~~ requires to go a
long way farther to the westward ^{a2} ~~the~~ inner one. It ought to go
up half a mile further to the southward, and westward.

42

Public Works Committee

Hastings River Harbour Works.

1026

What place wd it be ~~more~~ nearer to ? Nearer to
 the land on the west side of the channel above Harrington - what
 they call fresh water creek, the creek that drains the swamps.

27

Do you think that if it were done first it wd be suf-
 ficient to make the ^{stream} ~~water~~ much better than it is at present?

Yes

28

What are your reasons for saying so? I think we wd have a
 straight run of tide. ^{By} confining the water between those two walls
 it wd confine the tide and consequently ^{it} ~~will~~ scour out the sand
 and wd insure a uniform depth of water. Inside the river it most
 certainly wd do so, but possibly ^{it} it might carry the outer bar
 farther out.

29

Without constructing the southern wall? By constructing ^{it}
~~the northern training wall~~ ^{the northern training wall} farther out you may carry the sand flat
 out with it

30

Do you think, as a man of large experience, that there is

43

A 20

a prob-y e being tt ?No ; I do not think it wd. In my opinion
t set to t southward wd carry ^{the sand} away .
^

1031.

Do you think tt tt result might be obtained by extend
-ing t^his northern wall ?T inner wall, w t south wall too .

32

You wish t south ^{can} wall to be done in any case ?Yes .
^
It will never arrive at anythg without t southern wall, in my
opinion

33

What is t distce across Mitchell's Island ?About
400yds

34

How far do you feel t stress e we ather up t river?
T last gale we hd came right across t point e Mitchell's Isld
where there is a dry sand spit ; it came right across t top
e it, and there was a big sea inside t harbor ; it caused a
vessl to go ashore .

35

Which vessl ?T John Gellan tug boat .

44

Johnson
H. Miller

1036

A 21

What was her tonnage? Aht 50 tons

37

As to the bar shifting farther out, what

Temporary Chmn - ~~what~~ depth of water have you

outside the present entrance? It drops off gradually from the bar
at the present time. It is ~~20~~ 29ft and in a few casts you get
18ft until you get to 3 or 4 fathoms.

At 189

38

[It drops very sharply? Not very sharply, but from 29ft

it will drop down 6ft ^{for} about 200, and it drops very rapidly
after that

39

Is there a southerly set in there? Yes ~~at~~ sometimes a
very strong one

40

So any sand driven out of the river will be carried to
the south beach? Yes, down to the right

42

Out of the way of the river? Yes. ~~But there is a danger~~

Par

42

[But there is a danger,
if a strong ^{south easterly} gale, of it being driven back again? Yes

45

1043

And hence your contentn ~~is~~ ^{is} ~~it~~ ^{the} southern brkwater is
a necessity? Yes

44

South Easterly
It is to prevent ~~S-E~~ gales in driving the sand across the
mouth of the river? Yes and to prevent the sea from washing it in over
this bank

45

You think that with the construction of the southern brkwater,
it is a danger always likely to happen? Always will occur

46

South Easterly
It a strong ~~S-E~~ gale will force the sand back and so
form a bar? Yes

47

Mr Black - The Harrington bar is considered one of the most
dangerous bars on the coast? Yes. I think it is not the most danger-
ous. It and the Richmond bar are not equal - being open to the
ocean

48

Sailing vessels cannot very well come in without the
assistance of the govt tugs? They cannot now, but they used to do it
before there were govt tugs ~~there~~.

46

21054

A 23

1049

Do you mean to say that if there were no tugs they would be able to come in? They would be compelled to come in, so long as the wind is strong enough to let them in they are bound to come in.

50

But it is not very safe for them? With assistance of a tug it is of course safer for them.

51

Does the northern headland give any protection from ^{with} Easterly gales? Not a bit. Crowdy Head shelters the bar somewhat from the east, with true ~~SE~~ ^{with Easterly} weather. (Crowdy Head)

soon

52

~~Crowdy Head~~ stands out to the eastward of the Harrington bar shelters it somewhat, and there is not quite so much sea there as there would be with the same amount of wind blowing to the south.

53

But the S & S E winds are the most dangerous to the entrance, are they not? No. ~~South easterly winds are the worst.~~ Easterly gales bring a bigger sea in as a rule, but a heavy ^{South westerly} S W gale is the worst for this bar, because it brings down with it a cross sea and a

47

heavy ground swell. I h had worse seas there w a south west
gale than I h ever had w any other wind - more difficult to
come in w, becse you h to let go yr anchors inside and track
them up. ~~to~~

It is then vry dangreous to make t entrnce in S. West
weather? Yes, w a sailg vesl, w t assistce o a tug it is
dangreous

You h to keep well off t north pnt I supese? You h
to take t vessl as far ~~t~~ south as you can, and if you h
not a tug, boat, and yr vessl will not stay, she goes ashore. I
h assisted a grt numbr off t beach under t same conditions.

Entrnce to t river is fairly free fm rocks I
believe? No, rocks at all at t entrnce to t river

Then if you h a good scour you may get any depth
o water? Yes you may get 34ft or 36ft o water. I think you go
down pretty well to t bedrock then ~~H~~ on t bar itself.

Provinci
Railway

1054

54

55

56

48

57

Do the easterly gales ever cut thro the sand terraces opposite the oyster beds? To my knowledge the sea may have spread over but never cut thro

40

58 41

Then I presume that the portion of the southern training wall which stands by itself is intended to receive the current as it comes down the river and throw it into the centre of the channel? Yes

59

In order to prevent the scouring or cutting away of the sand terraces on the southern side? The portion marked there is the oyster bed rocks, and that is where it would have to be commenced. It has a solid bottom and that is the place I would start from.

60

Can you add anything to what you have already said? The only thing to be done now is to go on with the present work - the inner training wall - and to start the southern one as soon as they possibly can.

61

• Mr Tom Chamm - In the event of these works being successful predicted by the officers of the H & R Dept, and a permanent depth of from 12 to 15ft of water being obtained on the bar and in the

44

21054

A 26

river also, do you think that the H C S S Co will be likely to reduce their freights? Seeing that it will possibly be 2 yrs before you get the southern trading wall completed I hardly know what to say. A nother generation will be sprung up by that time. I can't form an opinion.

1062

The southern wharwater cannot be constructed until the southern trading wall has been constructed to give them a means of access to it? Certainly. You would have to commence with a trading wall and the wharwater to follow.

57

*Return
to
Solomon*

Thos West Dugdale , Storekeeper, sworn and

and -

1063

Mr Black - What evidence h you to offer ? I h bn a

residnt here f a long time and I know tt there hs bn a grt
loss to t district thro t detentn and destructn o proprty,
espeely perishble produce, on acct o t shalownes o t bar; and
on acct o t diffity and danger in passg in and out we h sufrd
grt in onvnce and loss f many yrs. I h bn a residnt in this
district f abt 40yrs and I h seen it you may say fm its
infancy and h seen how things h gone on since I came to t
river and t amt o loss sustaind hs bn enormous - t loss o
proprty and perishble produce . Twant o a propr entrance hs bn
felt to my knlwdge f a grt many yrs. Sometimes t bar is
passable but on othr occasions it is vry dangrous. I think it
is one o t most dangrous bars on t N C .An attempt hs bn mde
to some extent and some work hs bn done at t northern traing
wall but my individl opinion t is they comenced on t wrong
side altogethr. They shd h comenced on t southern side. My know-
ledge o t br is prefy considrble. I h watchd it f many yrs and
my impressn is tt t southern traing wall ought to h bn comenced
first, becse t south winds, wh are t worst winds we h on t coast,

57

and the south east winds carry the ~~sand~~ ~~over~~ which crosses
 the bar and fills up the entrance. There will be scarcely any good
~~expected~~ unless the southern training wall be constructed. I believe that
 money will be wasted if it has already been expended unless the Southern
 training wall be carried out, and I think that ^{the} tinier training wall
 if continued up the river along the south side along by Mitchell's
 field is very necessary. These works are necessary for the river
 improvement, and if it be possible that we shall not get the try I am
 sure that a still greater necessity exists for the harbor works

If you considered the relative advantages of ~~the~~ ^{the} and the im-
 provement of the entrance to the river? For the general advantage of the whole
 district and of the northern districts I believe that ~~it~~ ^{w^d} be the
 better, because there is a very large extent of country to be tapped
 by the try. Of course the training river taps only the lands adjoining
 the river, but ~~the~~ ^{the} would be a great advantage for the sake of the whole of this
 district and the districts to the north of us

Is there not as much good land, and perhaps more
 good land, adjacent to the river throughout its course as there
 would be to the try, taking mile for mile? Yes, of good land, but it is

52

210574

A 29

localised.

Do you think that £1,000,000 could be more advantageously spent on the proposed railway to Taree or £100,000 on the improvement of the river? At the present time I think the expenditure of £100,000 on the harbour works would be more advantageously spent

You bring your goods by steamer from Sydney now do you not? Yes

How much per ton do you pay? I think 40s per ton measurement and 12s 6d per ton dead-weight

You trade with Sydney then? Yes

If a railway were constructed to Taree, would you continue to use the river or would you use the railway? I think that if perishable produce to the railway would be ~~more~~ preferable

What perishable produce do you import from Sydney? My shipments are very small just now, and cannot be taken as a criterion

53

A 30

072 *Salomon*
Reynolds
What perishable produce do you get from Sydney? In store goods we get a pretty good supply

But they are not perishable are they? Not from Sydney, but I mean the exports

In the event of the railway being constructed, would you continue to trade with Sydney by steam or would you use the railway? I think the railway would be preferable

You would use the railway yourself? I think so

Do you think there is any likelihood that the railway would carry your goods at 12s 6d per ton deadweight and 40s if goods that are measured? I do not know. I do not know their tariff. I have had no experience with railways

Supposing that you were charged double or perhaps treble

by the railway, what would you do then? I do not think the goods would be conveyed by the railway then. I think that water carriage would be the cheaper.

In the event that you so far as you are concerned would be
used only under exceptional circumstances? I think it would depend greatly
on the charge of freight

If the cost of carriage by rail were two or three times
the cost of water carriage you would use the rail only in exceptional cases
? Yes I think so. I think the water carriage would be preferable
under those circumstances, but it refers principally to the Manning river and
Manning river districts

Do you think that the perishable products you were speaking
about just now - and I suppose that when you speak of perishable
products you mean dairy produce and eggs and articles of that
kind - would bear the cost of rail transit to Sydney or Newcastle? I
^{not} can answer that question

You do not know? No.

But if they would, that would be the preferable route because of the
sickness of transit? Yes. You have to compete with other districts

210524

A 32

Handwritten notes:
Remarks
10/18/83

in regard to the kind of produce and there is great loss in the direct

10/18/83

How often do the steamers arrive here? sometimes twice a week. On the average, I believe, once a week. I can't say exactly; I have not taken particular notice

84

Do you not think that for your trade and township, it is a sufficiently regular service? No, I do not, because the detention at the bar is very great sometimes

85

But when the steamer is arriving twice a week there can be no great detention at the bar? Yes; but sometimes there is a great detention and great loss in consequence

86

Supposing that through the improvements to the river you had a tri-weekly service and no detentions, except such as were caused by great gales when it was impossible for vessels to venture either in or out, do you not think that you would have a fairly good service? Yes, I believe there would be a good service

56

1087

Now supposg tt, thro t constructn o these traing walls
 and t scourg ~~minim~~ caused thereby you ~~hd fm 12 to 14ft~~
 wh remove t bar, you hd fm 12ft to 14ft o water there, and tt t
 dredg o 2 or 3 flats wh lie between here and Harrington gave
 you a depth o 12ft or 14ft o water thro-t at high tide, and
 tt in conseque o tt a larger type o vessl cd trade w t river,
 and supposg tt ^{as a result} ~~increase~~ o this you hd a more frequent
 service, and in conseque o t increas size o t vessl and t
 increas safety o t bar lower freights, do you not think tt ld
 competition wd be well nigh impossible? Yes I think it ~~wd~~
 unless there were ~~a~~ correspondg reductn in t freight by rd l
 compared w t water carriage. We are all living in hopes tt tt
 will be t case.

88

I suppose you are aware tt on ~~some~~ the northern
 rivers, in conseque o t dangers o t entrance ^{S,} insurances are
 very high? Yes

89

If t entrances were mde ^{safe}, entailg a reductn o
 insurce charges, tt wd mean a correspondg or alinst a corres-

37

ponding reductn in freight ?Yes it wd

1090

Suposg tt you got such a reductn, say o 5 %, do

you think it wd be askg too much if t state were to impose a

tonage due o abt 1 % as an actual charge on t expndtre ~~tax~~ ^{incurred}

~~Q~~ in improvg t river ?I do not understnd your questn

91

Supposg tt thro this improvmt o t river at public

expndtre you hd a 5% reductn in ^{freights} ~~charges~~ wd it be too much

if t state to ask tt 1% o tt shd go into its coffers as tonage

dues to recoup t state trsy f t expndtre wh ^{wd} ~~caused~~ t re-

ductn in freights ?I think tt t risks wd be very near ly t

same

92

Wd you not give 1% in order to get 5% back ?Yes I wd

93

Do you not think you wd h a long way t best o t

bargain ?Yes I believe so

94

Do you not think it wd be a good investmet ?Yes

95

You do not think tt t pple o t district are so economical as to grumble at being askd to donate 6d where they

58

*Arthur
Gardner*

get 2s 6d as a consequence of the donation? I do not think the people

would be very well pleased. I think that the district is entitled to the

expenditure without any refusal to the government for the works done. We have been to

my knowledge, for 40 years asking and ~~only~~ ^{until} lately we never had £1

spent on the entrance to the harbor

96

Do you not know that they make such charges in other

parts of the world? There may be ^{such} charges ~~everywhere~~; but I do

It is a charge of tonnage duties

not think they should be imposed on the Manning river district.

97

Then you would rather go without the improvements to the

river? No, I think we are entitled to the improvements without any

~~charge~~ ^{charge} being made by the government, and I think it is nearly time we got

~~them~~ ^{them}.

98

Do you know that all the vessels that go into Sydney

harbor pay heavy wharfe and tonnage dues to the government for the money

expended there? Yes, I know that

99

Why should any exception be made in the case of the Manning

54

river? I do not think it wd be very pleasg to t popla. I think there wd be a general outcry agst tonnage dues. I think we are entitled to h t harbor improvmts if we do not get t ry, and to h t improvmts free o any expense to t pple, seeing it wd hd nothg done f so many yrs and there is a lrg poplatn settled here

1100
Suposg it were made a comitta t you shd not h t improvmts to t harbor unless you consentd to t paymt o tonnage dues. What then? Of course we wd h to submit

PV
/ Tam Chuan - Are you aware t if t ry were constructed t distce being 220 odd miles fm Sydney, and if you were to pay t ordinary ry freights, you wd be chrgd abt 50s per ton f t goods you now get f 12s 6d? I do not know t

2
It wd be t ordinary rate f goods, such as wine and spirits, drapery, packed ironmongry, and goods o th sort - between 50s and 60s a ton - it is if t same rates were chrgd as in othr parts o t coly; sugar salt and iron you wd perhaps get at half those rates; t lowest rate on our rya is f grain and t freight fm here to Sydney wd be 13s per ton;

60

therefore the freights generally wd be fm 13s to ^{70/-} ~~50~~ per ton? We
are payg 13s per ton by water

1103

You pay 10s for maine? Aht tt

4

The freight wd be 13s, and accordg to the Classo
goods the freight wd go as high up as 70s; do you think, in
view of those circumstances, if a ry were constructed to Taree you
wd be likely to patronise it? I think so. Perhaps those pple
living adjacent to the river banks wd prefer the stmr under all
risks, but the larger population wd avail themselves of the ry

5

Mr Hassall - Supposg if it were to cost you £2 10s
to get goods to Sydney by rail fm Taree and you cd get them
by boat for 12s 6d, wh mode of transit wd you patronise? *boat*
o course

6

If you cd get yr goods cheaper by a bullock team fm
Newcastle than by a boat, you wd patronise the bullock team, wd
you not? Yes

64

210574

A 38

Yank
1104
Miller

You h livd in t district a long time ?Yes

8 Does much o t produce o t district go thro yr hands as a general storekeeper ?Not much o it now

9 W regard to yr own business, are you pretty well satisfied w t mode o transit o yr goods at t pres time ?No ;I am not

10 Then, to remedy it you say t certn improvmts might be effectd in t river ?Yes

11 And you think t t entry wd be justified in expndg a certa amt o money on t improvmt o t river and thereby to remove whatever impediments there are now to t navigatn o it ?Yes

12 If t ry were constructd, do you ^{think} t it wd compete sucesfully w t water carriage ?I cant expr s an opinion upon tt. I think tt a lge quantity o per hle produce wd go by train

13 Where are t general public who are going to be benefitted by this ry if it be constructd ?if you were to

62

reside in this district you will soon find it out

Yes

W. J. Par

14 The poplata is distributed along the various water courses and the little valleys running from them, the people utilising the land,

I presume for agricultural and grazing purposes? Yes

15 And doing their best to make a living in that way?

Yes

16 ~~Account~~ ^{being} the poplata is scattered and ^{able to} ~~never~~ cross the watercourses only at ^{certain} ~~main~~ points, it must of necessity be

that a considerable amount of road carriage would have to be done even to

reach the city? Yes

17 Therefore if the residents could reach the water

perhaps having to travel a few miles farther and then have the benefit

of the water carriage, would they not patronise the water in preference

to ~~transporting~~ the city? I think so

18 I suppose there is a considerable amount of business done in

the area? A fair business

19 How many times does the steamer run in here a week?

Once, and sometimes twice, according to the state of the weather

65

1120 Pretty well loaded every trip ? Yes

21 Does only one stmr come here ? Yes

22 Does it stmr meet t requirnts o t trade ? Some-

times

23 And sometimes you h to wait f an order to be execut-
-ed ? Yes

24 But if there were no hindrance at t mouth o t river,
either coming in or going out, you think tt one stmr cd meet t
requirnts o t district so far as t carryg traffic is concernd ?
Not t present stmr, but a larger boat might do it

64

*Muller
Paterson*

to/ Friday June 3, 1898

[The ctee met at Cundletown at 10.30 a m]

Present -

Francis Augustus ^{us} Wright Esq, Tom Chrmn ⁴⁷

The Hon Dan ^{iel} O'Connr

Thos Henry Hassall Esq →

John Lionelegan Esq

George Black Esq →

The ctee further considrd t proposd harbor works at Manning rivr

William Mills, boatman, Cundletown, sworn and exd

Tom Chrmn - T proposl beft t ctee is to spend £100,000 in add itn to £23,000 wh hs alrady bn spent

1125

by Tom Chrmn - Alrady t sum o £23,000 hs bn spent and

it is proposd by t H & B dept to spend an addital £100,000,

sons to be ~~the~~ t southern brkwater ^{out} 900ft, to ~~construct~~ ^{run} t training wall shown by

~~the~~ t firm red line, and to continue t other training wall as

shown on t map; What is yr idea o t effect o these works ? I

65

think it wd be very good if t southern wall were there

1126

If t departmentl officers say tt t constructn o ~~the~~ ^{these} works ~~at a cost~~ at a cost o £100,000, will give you at all times 12ft o water on t bar, and they propose to dredge t rivr so as to allow a boat drawg 10ft to come up at any time, do you think it will be o some advtge to t Manning river? Yes, and t result will be cheaper freight

And if tt work were carried out you think t river wd get all it wants in t shape o transport? Yes, f t presnt,

Vessls cd come in and go out at any time? Yes

W tt work constructd and v boats o t ⁷ ⁴ Elektra type able to trade here, you think ~~4~~ t wants o t district wd be fairly met? Yes I do

Can you tell t ctee what effect t piece o work alrdy done is ¹⁰ on t river? It is not yet up to t mark; there is not enough done yet to ~~see~~ ^{show} what t effect will be

66

1131

But we are told to along the wall already constructed
the river is rapidly deepening? At this end it is, but not at

the mouth. There is nothing to protect the ~~entrance to~~ ^{entrance to} the river.

Southwesterly

Do the gales drive the sand up into the mouth of the river?

Yes

And until the southern breakwater be partly constructed you
think that it will always happen? Yes

But if the southern training wall be built - and that is the
first work to be carried out, ~~the entrance to the river is~~

~~you~~ you think that it will protect the entrance to the river from
S E winds? Yes

How long have you been employed as a boatman on the river?

Abt 10yrs

1136

And your occupation as a ~~boatman~~ boatman has made you fairly
familiar with the river and you have known times when vessels have been
bound and could not get out, and other times when they could not get
in? Yes; I have seen the steam stuck on the flat 2 or 3 days

68

a new channel No

is no danger of its drying there ~~and making it~~ make

There is so much vent of water at the back of there

444
43

over No, I do not mean it to go over there.

river is never high enough to carry the water

1140

over

I do not think the river will break out but the sea might break

is it the narrowest part of the river, I think

1139

together? There are 200 or 300 yds between them

island where the sea water and the river water are very close

Mr Marshall - Is there not a place on Mitchell's

1138

thing in the district, it is present at any rate

believe it will be the same year. I ~~do~~ believe it will be the best

and kept acquired out by the construction of those works, and you

little roads in the channel, a natural channel will be secured out

and when they are completed the contents in it will be arrested and a

It is proposed to carry out those works I have spoken of

A 44

Pollard
1137
Muller

210524

1142 t breakwater, to make a good harbor entrance, *shd*

be carried out at t entrance as proposd ? Yes, tt is t proper place

1143 You think ~~it might require~~ ^{it} some protectn where it ^{might be required} *is*

is proposd tt a rubble stone- facing; shall be erectd - I do

not know tt it wants anythg there, but it wants a southern *wall*,

as I h ad, to prevent t sand fm siltg up

H

64

Friday June 3, 1898

6/

Meeting at Croki 2.45 p.m.

PRESENT -

Francis August ^{us} Weight Esq, Tem ~~...~~

The Hon ^{il} ~~...~~

^{ma} Thos Henry Hassall Esq

John Lionel ~~...~~ Esq,

George Black Esq,

To be further considered proposed harbor works at ~~...~~ river

George Aliza, farmer, Oxley Island, sworn ~~...~~

1144

^{my} Tem ~~...~~ - How long is your ~~...~~ in the district?

57 yrs on the 15th Jan next

1145

You are one of the oldest residents? I believe I

am the oldest now

1146

Do you know anything about the scheme for the ~~...~~ of

deepening the bar and improving the navigation of the river generally? I

had a good deal of experience of the bar

1147

Do you know anything about the scheme for the ~~...~~ of the river?

Muller
Rhodes

21054

A 47

not know much abt it

1148

It is proposed to run a train wall along the southern bank
of the river down to the sand spit and to carry out a breakwater
900ft long at the end of it, and it is also proposed to run
another train wall along the north ^{side} of the river down to the work
already done, and it is believed by the construction of these works the
flow of the river will be narrowed and the current will be increased,
and the water assisted by a little breeze the channel will be deepened
and the bar will be permanently removed; *What is your idea?*

Goon

~~What is your idea?~~ I believe it will
greatly improve it. Many times I have assisted vessels to get out
on the southern spit. We had to unload them and remove the cargo
to the north ^{side} and re-ship it there, after the vessel had
floated in off the ~~bar~~ *southern spit*.

1149

It is supposed by the engineers to carry the southern
train wall down and carry the breakwater out 900ft beyond the
sand spit will prevent the south east winds from driving the
sand into the mouth of the river? You will be past all danger
beyond the southern spit. I was wrecked there 25 yrs ago in the
Fire King. We were disabled on the outer bar and the vessel

drifted

41

on to the northern spit and be like a wreck

1150 Was she totally lost? Yes

1151 It is proposed by the Govt to spend £100,000 on this

work: the completion of the northern breakwater is not included in it

and only a portion of the southern breakwater; but the Admiralty still

says that the expenditure of £100,000 is sufficient to give us a fairly good

harbour, will make a fairly good harbour, giving 12ft ^d water on the

bar at all times, and that the expense of a little more

there will be the same depth of water in the river; if it is

accepted, will it meet the wants of the river? Yes I believe it

will

1152 If you had a bar and river capable at all times of

admitting boats of the size of the "Electra" will it be sufficient for

trade of the place? It will be sufficient for such trade as we

have here ^{starting} all my life time here

1153 Do you think that the proposed works are likely to be

useful? I believe they will be useful. I believe that the northern

breakwater will not be of much use unless there be something

done on the southern side. There has always been more

danger on the southern than on the northern side

~~by the way~~

[Faint, illegible handwriting]

1154 [*B* ^{*s*} *leaping*
 reason of the S E wind [^] ~~keep~~ [^] t sand up on t bar
 Yes

1155 ^{*southern*}
 If the southern side water and the *river* [^] ~~river~~ [^] ~~river~~
 be constructed you believe it will be stopped? Yes

1156
 The original proposal was to spend £220,000 on the
 harbor works; £23,000 is already spent, and the engineers say
 that if an additional £100,000 is spent, they think that the works will
 answer all the purposes required of them - that they will give you
 12ft of water on the bar, and that with a little dredging and *t* ~~t~~ ^t
 scour of the river, you will have a river navigable all the way to
 Wickham, with a fairly *good* depth and always a good bar; if that
 were done, I do not suppose you would want a *ry*? No - not if the
 lower part of the river anyway.

1157
 The river banks are the richest part of the district?
 Yes: they are by far the richest.

[Handwritten mark]

Charles
Robinson

21054

A 50

1158

And I think the outlet is on the banks of the river?

Yes

1159

And therefore the people there will be served ^{better} by a

river with a good entrance than they ^{will} be by the sea? I believe,

mostly speaks it I am on the banks of the river below Tago is

^{10 acres}
about ~~10~~ above Tago.

1160

They will serve only the ports of the river - it will

not serve the lower ports? It will not serve the lower

1161

And as the cost is estimated to cost £1,000,000 and to

entail an annual loss of £31,000 do you think the Government should

spend money on the lower part of the river in making a good

harbour? Yes, it will greatly improve the lower part of the river

1162

And it will do more good I suppose to the majority of

the people than to the few? It will in my opinion. It will give

facilities for the export of all kinds

1163

It will be cheaper to the state and better for the people

? Yes. A railway will be only for passengers and live stock.

74

1164 [If carrying heavy goods they will be too expensive? Yes

1165 [Therefore even if they were constructed, and if you were to have a good harbor, the bulk of the trade will go by sea? Yes. It is the cheapest freight to send all produce by

1166 Do you know anything of the mountains at the mouth of the river, towards Gloucester? Yes I have been there often

1167 A great deal of the country is very rough is it not? Yes

1168 Unsuited for settlement? There may be some of it at the Barrington and other places suitable for settlement, but the greater part of it is not fit for settlement

1169 On the Barrington and about Gloucester there is some good land? Yes

1170 But it all belongs to the A A Co? Yes

1171 And the proposed way will pass thro' their land? Yes I think it will, they should give whatever of their land is required for the construction of the way

75

1172

Do you think the taxpayers of this county are justified in spending £1,000,000 to bring a railway to Tarbo and then suffering a total loss of £31,000 besides? I can't see it

1173

You think it they had better devote their attention and money to making your natural port better than it is now? Yes. If they can improve it as much as they have improved Newcastle Harbour in last 50 years it will be a great benefit to everyone

1174

The engineers tell us that they could get the water out of the sea and all the way up to the top of the hills, and you think that if they do it it will be a good permanent work and beneficial to the district? It will be

1174

with I ...

... I believe it is ...

... I believe it is ...

... I believe it is ...

... I believe it is ...

67

... I believe it is ...

... I believe it is ...

... I believe it is ...

... I believe it is ...

... I believe it is ...

72

... I believe it is ...

... I believe it is ...

... I believe it is ...

In ...

1177

Do you ...

1176

Witness ...

Mr. Black - You ...

11 45

Izra ...

210574

Robertson
Ginn

it may thousands of acres and be put under fruit cultivation. I

believe to be some of the finest in both here and Port Macquarie

it there is in the world, especially oranges. It is well known that the

for growing fruit

country lying between Taree and Port Mac is the home of the orange,

and it is a well known fact that Macleay River oranges are well

inquired for in Sydney and in fact a good many years ago I think that

they were very valuable in this respect, not only so, but I

think we will receive a large quantity of various kinds of oranges

and other fruits, such as the Macleay and Port Macquarie, and other

places, leave out altogether the oranges to be received by the

Sydney and Maitland. There is a large trade along the north coast,

in fact you can scarcely look out at seeing some one traveling

one way or the other, and I think it is ~~several~~ *people* many will dispense

with the use of their horses and will use the railway.

1178

Do you know that the freight by train to Maitland

is at least twice as much as the freight to Sydney by water,

and that the freight to Sydney by train will be about four times

as much as the freight to Sydney by boat - I suppose it will

be a great deal more at all events. Under those circumstances do you

think the people will be likely to use the railway when they can water

carriage so much cheaper? I think they will if possible goods

Par 1179

48

1180

[Why is desirable some? Boats very frequently

they deteriorate in value in going to Sydney and
very often they are altogether spoilt

1181

How - time delay? Yes - finished fish

1182

There is a scheme proposed for removal of bar

and improvement of river which will take away the ~~cause~~ ^{cause} of delay;

If you were to have an improved entrance and straits of a more

powerful character going up and down the river, they ~~will~~ ^{will} be able

to run to Sydney in about 3 hours; you

could not be round by the river as quickly as that? I suppose it will

be quicker if it is not the length of the passage by straits,

but the delay at the bar is the main objection

1183

But this scheme is for removal of bar; suppose

if the bar is removed and you get 12ft or 14ft of water at the

entrance and straits are able to come in and go out in all

weather ~~is~~ ^{is} easy to go, and you have a large class of boat

that is not there now and suppose if this larger class of boat

could go up as far as Taree, do you think it, with such a convenience, you

79

Smithy
Hatters

210574

A 56

with any need if they are likely to purchase it at all?

It will do away with ^{the necessity for a} to a very great extent, I believe. — 5

far as I am concerned I may say that it will suit us best on the

lower part of the river, but I cannot speak ~~of~~

the people of the district generally

1184

Mr. Pease - How far do you live in here? Just

across the park

1185

I believe you were one of the men who started the

wool industry here? My son did

1186

Is he making it business a success? Yes, quite a

success

1187

So much a success that he has given it up? No

1188

I mean personally, and is he giving his energies to

something else? He is keeping it on

1189

Not by his own labor? Not altogether his own

labor. He is here sometimes

1190

It is not such a success that it enables him to

employ men instead of doing the work himself? Yes

80

1191

How many cattle do he ? I can't say how many

1192

I suppose you are interest in it ? Not in his dairy .

He wants land in the

1193

[What is yr area ? I own abt 200a altogether

1194

How many cattle are there on it 200a ? Some 200 .

1195

It is a beast to take care ? It will carry more than

it

1196

Without have to drive them elsewhere during por-

tions o t yr ? Perhaps in time o flood you n to remove them.

1197

But in ^{very} bad weather ? In crummy weather you can

keep it number o cattle there .

1198

What did you grow on it in previously ? Principly

corn

1199

Which pays you t better ? T always a lot deal

1200

So you found out it easy work is not always t best

paying ; maize grows is easy work, is it not ? On no. you n to

work early and late to earn anything at all

1201 But since yr land has been cleared it is comparatively
easy work ?Not at all

1202 There is no necessity to get up at 3 or 4 o'clock
is it wrong ?Perhaps not

1203 But you have to do it in winter ? we get up at
4 o'clock

1204 And must be at it late and at night ?Sometimes

1205 But it pays much better than maize growing ?Yes I
think that the winter is the easier ~~one~~ ^{one} however,
but we have a long spell in the middle of the day

1206 Well, if it pays better and is easier work so
much the better if those who carry it on ?Yes

1207 Whatever produce you have, do you ship it here ?Yes at
the wharf

82

Matthews
Mullon

210574

A 59

1208

How many butter factories in you here? Only one
and several dairies

1209

How many dairies in you? 14 belongs to this ^{Company}

1210

Does the butter factory take all the cream from the
farms round about here? The factory here takes generally, but
the other dairies take sometimes

1211

So you do not send a great deal of cream out of
the district? We do not send much cream out of the district, but
we send butter

1213

The farmers individually do not send their cream out
of the district, but to the butter factory? Yes, generally; but I
think there is an exception or two.

1214

[

The owners of the butter factory take the cream from the
farmers and ship the butter to places where they have a market?

Yes H to Sydney generally.

85

1215 What is the price of butter here at present? I think
1s 1d

1216 It is a fair price for butter, is it not? Yes, but the
supply of milk is very small now

1217 Why is it so cold weather? Not only that, but we have
had a heavy rain and very high tides which destroyed the grass

1218 But you have no doubt that dairies is preferable to any
other industry which you can carry on on these rivers? Yes

1219 Is the 12s 6d freight by boat the average freight
which can be paid on these rivers? I ~~cannot~~ ^{cannot} say. We did not send
any of our cattle to the coast for many years, but we took to dairies we had some cattle
and found that it was better than growing maize

1220 To which side do you send your cattle? We send them
on the rivers. Sometimes they are sent to Sydney

1221 [And sometimes they are sent to Maitland? Yes
1222 [But not very often? Not very often

84

Edward Albert Smeaton, Fisherman, Jones' Island,

Harrington river, sworn and exd -

1223

Mr Hassall - You see the plan of the river shows in Pelican Point down to the entrance at Harrington ; it is proposed to carry out certain works in connection with the entrance to this river, by running a training wall along the eastern side of the river and ~~out~~ ^{out} to the southern ~~entrance~~ ^{entrance}, and then ~~run~~ ^{run} a breakwater 900ft to protect the entrance from the S E winds and the drifts ~~sand~~ ^{sand} it is also proposed to run a training wall along the western bank of the river, following right round past the township of Harrington to the Pilot Sta, and continue it out to the northern breakwater ; The black line shows what work has been done, and it is proposed to extend it work out on the north side from a breakwater, and then to continue the training wall along the sand flats right up to nearly opposite Pelican Point ; you can see where the work has already been done ? Yes

1224

Has the project of the wall had the effect of deepening the channel in any way ? It has had the effect of improving the bar getting

85

Wilton
Talker

A 62

1225 T work may complete as in effect a material

improve it but I believe it has benefited us personally to

the extent of £50 by the star route & more direct communication

1226

By being able to ^{come} is better than she did not

? Yes. After Xmas and in it to midwinter the bar generally ^{skated}

up and split into three small channels, but since the ^{training ball}

was put there it has not done so

1227

It has kept the one channel open & why not the other?

Yes

1228

There is no advantage to the star route in or going

out? Yes. The channel shifts to and fro, but a very small

copy of the report is sent it used to do

1229

But it still retains the one channel only? Yes

1230

If this other proposal were carried out what

do you think the effect of it will be - say compare at the bottom

81

Do you think it is necessary to construct this

1233

Insulation of the water

But I think it is necessary to plan a channel in some

1234

order in which it is proposed to construct it

Yes

Does it seem to you in any way that it is not

1235

was formerly a shallow bay that is just so

at station it has in effect a pressure channel over what

But since it is a channel it is by completion below

1236

now to be to the construction of the water

split there as it is at the present moment. It was at the station

It is never by a deep channel

Handwritten signature

effect upon it and to a great extent it is within entrance

There is a channel in the vicinity that

1237

of water to be in a southern point of entrance

channel in the water will just below a pilot station it is a great

same split and it is present moment a water strikes it

the line previously mentioned, and to extend the backwater the distance proposed into the ocean? Will the prevailing seas ^{here} ~~be~~ ^{be} southerly and it makes the bad bars and prevents communication

1236. So the backwater will be a protection against the most easterly

1237. And ^{it} will be the means of creating a strong scour in the river ^{at} with the effect of keeping the channel open practically at all times and in all seasons? I believe it will have the effect

40
41

1238. Do you think that the ~~work~~ work will be beneficial to the river? I have no doubt it will, judging from the effects at the present wall.

1239. You feel confident that an extension of the work would result in a very largely increased facilities for getting in and out of the river? ^{Certainly.} ~~It~~ It can be proved already by what has been done

1240. Is it very difficult to get in and out there at the present time? It is, I believe, it is one of the most dangerous

Nalke
Fellway

210574

A 65

bars on the N Coast, but it has not been nearly so dangerous since it will be put there as it was previously

1241

It shows the money spent has not been wasted? It has not

1242

You depend entirely on the stream as your means of communication between here and the market? Entirely

1243

Do you think that if the bar entrance were improved there perhaps would be more trade in and out of the river? I have not the least doubt of it

1244

Does the present stream traffic meet all requirements? At times, but not always

1245

Do you mean, then, that it is a better means of getting in and out of the river an additional steamer would be put on? I have not the least doubt of it

1246

To convey the produce from the farms lying along the banks of the river? There are farms lying idle in some places. The farmers are handicapped. ~~They~~ During some portions of the year they can not get their produce away; but when the price rises

89

they are sometimes handicapped because they cannot get their produce away and the advice of a river market.

So I suppose I may say that the

1244 I suppose the bulk of the farms are situated along the course of the river and the creeks going into it? Just so

1248 And nearly all are served by water carriage? Yes

1249 They are only a short distance to go to get their produce to the water? Yes, with very few exceptions

1250 So practically, ^{the} opening up of the river entrance and making it available in all seasons would be of distinct benefit to the people of the district generally? It would

1251 How would you describe the proposal to construct a by-pass? - I think

1252 Do you think that the by-pass would serve the district as well as the river? I think the advantages of the by-pass would be high

1253 And the cost of construction, ^{being so high, the cost would be too} ~~high~~ ~~to~~ ~~be~~ ~~justified~~ ~~by~~ ~~the~~ ~~benefits~~ ~~to~~ ~~be~~ ~~expected~~ ~~to~~ ~~be~~ ~~obtained~~ ~~therefrom~~? I think so.

1254 But you think money might be advantageously spent in improving the entrance to the river? Yes

1255 Now look at the red line on the map marked "Rubble stone ~~face~~"; it is proposed to carry out a piece of work there by putting rubble stone along at that particular point - do you know the place? We call it the blow-over; it is a point of sand ~~with no~~ timber on it

1256 It is a bare patch of sand lying between the ocean and the river? Yes

1257 Do you think there is any danger of the river ever breaking through there and forming a fresh channel? Yes, I do.

1258 What width of sand is there between the river and the ocean? By a rough calculation, I think, at high ~~water~~ ^{water,} there will be only about 6 or 8 chains

Rubbery
1259

Then, ~~when~~^{with} a heavy sea broke over it
particular spot, and the river got a start running thro there it wd
form a fresh entrance altogether? I h no doubt there is a danger
of it

60 Unless something be done to protect it? Yes

61 Is it the only spot it will need protection along
there? Yes; I think so. It has hardly altered in my time at
all, only the sand is worked over it. The ocean and not the river
seems to be encroaching on it

62 It seems to be a very narrow spit of land away a little and
narrow neck of land between the river and the sea? Yes

12 63 Do you think ^{it} the growth of a training wall along the
northern bank of the river with the effect of throwing the water over
there and perhaps carrying away a portion of the bank ~~at all~~? In
flow out the tides strike in the bend, but do not seem to ~~run~~
break over the spit. They strike at about the place proposed to be
protected by the Rubble stone facing and then turn and strike
out towards a point of the wall already completed - just about the end

o t wall.

1264 Do you think the effects of this wall along the northern bank will have the effect of keeping the channel clear at all times and secure the proper inflow of the tide and outflow of the river? I have no doubt it will, judging from my recollection. When I was a boy we had the narrow ~~so~~ at the end of the proposed training wall on the western bank; it is some 20 odd years ago. I was away at the time but I believe it was dredged open, and when it was opened it secured away. There is very deep water now where the narrow was formerly.

1265 So the channel has changed and has been secured out principally by the action of the tide on flood in the river? Yes

1266 ^{per} Tex. Chron - It is proposed by the Govt to spend £100,000 on these works in addition to the money already spent but it is not proposed to carry out any portion of the northern backwater and only a portion of the southern backwater - do you think that the portion carried out will be sufficient to protect the mouth of the river? ~~Do you think that the portion carried out will be sufficient to protect the mouth of the river in S E winds and the accumulation of sand - I mean the 900ft it is to be carried out, will it be carried out far enough to protect the mouth of the river from S E gales? I think not.~~

93

1267 You think the whole of the southern water and be
carried out? Yes; I think it is of more consequence than the
north.

1268 It is admitted, but you think the whole of the south-
^{water} requires construction to make a good job of it? Yes, I
think so.

1269 You think it, under any circumstances, the whole of the
southern water and be built to protect the south? Yes. I
think the south is of more consequence than the north.

William Reynolds

A 71

William Henry Strother, farmer and oyster-getter,

Mitchell's Island work and dam -

1240

Tom Green - His proposal works at the mouth of

river an explain to you? I have read a little in the newspapers

and there and I have seen it in the already constructed

71

What has been the effect of the work? It has been a very

good work I consider

72

Has it done any good? Yes, I believe it has done

a lot of good

73

Has it deepened the mouth of the river where it

is ~~deepened~~ presently it has

74

And has it done anything to ^{scour} ~~the~~ entrance? Yes

1245

Do you think that a ~~prolongation~~ ^{prolongation} of the work up the river

on the northern side, and the construction of work marked red on the

plan, on the ^{the} northern and southern side of the river, will be a still

further beneficial effect on the entrance? Yes. The northern training

will also be continued up to the oyster swamp as shown on the plan

95

I think it will do so

I think it is a good thing that you should be able to do this

If I should be allowed to do this, do you

1281

There is a large amount of work to be done

One of the objects of this work is to

64

It is to be done over a period of

It is a large amount of work, and it will be kept available, whenever it

Heaven here

It is to be done over a period of

ALL

I should like to see you in no expense of

48

There will be a large amount of work

As far as your knowledge goes, you think it

47

There is a large amount of work

There is a large amount of work

There is a large amount of work

There is a large amount of work

There is a large amount of work

There is a large amount of work

coming

1246

1287

It will be carried by the action of the river into comparatively deep water and then moved along by the sea current

Yes

82

It is proposed by the Dept to spend £100,000 on these works, and not to complete the northern breakwater, as shown by the dotted red lines, and only 900ft of the southern breakwater; you think the effect of the work will be good? Yes. I think it is of more consequence than any other part of the work

83

If the Govt make, as they say they can, a harbor at the entrance to the Mangrove with 12 to 15ft of water, do you think it means a considerable increase in the value of the river? *that* will permit boats to carry 500 or 600 tons of cargo to come here in any weather? Yes; I believe it will be a great benefit to the river

84

If you, as a resident of the district, were to put the question put to you, would you sooner have the harbor works completed or they built? *Yes* would you vote for Harbor works

1285

You think the harbor works will be more beneficial

94

Maynolds
Solomon

to the district - especially that they would be? It is a hard question to answer

1286

Suppose that they were completed and these narrow gauge works were completed if you would want to send ~~it~~ ^{freight} to Sydney you would pay 3 or 4 times as much to send it by rail as ~~you~~ by steam; do you think people would be patriotic enough to support them if they had their produce taken to Sydney by boat at one-third of the cost? I think they would not

87

It is not possible to carry maize or heavy ^{products} ~~goods~~ by rail to Sydney; they will always go by sea? Yes

88

all that they would be useful if we were to carry passengers, live stock and small packages? Yes

1289

In the case of this, do you think the entry would be justified in building them at the cost of £1,000,000 and losing £30,000 a year afterwards? I do not think so. But they would open up ^{new} entry,

1290 A lot o entry it belongs to t A A (b) ?Yes;but
there is a lot o entry also it does not belong to it empty

91 They wd can f 501s thro t A A (b)'s id and
they wd partly benefit fr its constructn. ?Yes

1292 Suppose th t quats were put to t ppls o t district,
4 will you n t say and let t harbor works go by t board, or will
you n t harbor works and not t say, wd do you think they wd
vote f ?They wd vote f t harbor works (1)

William John Harty, Rubber Factory Manager,

Croft, am on and end -

1293

Mr Harty - You are the manager of the rubber factory?

Yes; the manager of the Co-operative Latex Manning, Dairy Co., Ltd.

94

When did you commence business here? T. Harty

commenced in 1893

95

Therefore they have been 5 years? Yes

96

How long have you been manager here? Between 9 and 10

months

1297

How many statistics have you? Yes 1 in turnover

of the factory for the last 12 months. They ship to Sydney 327,809

the quantity of the year ended 30th April 1898. It is, a little

over 140 tons. The value of the goods sent to Sydney was £13,673 3s 10d. The

freight paid to North Coast S.S. Company for same period was £292, and the

residue invoice, machinery &c, amounts to £7, making a total

of £30. The factory's output is increasing every day.

Solomon
Havelle

210574

A 77

1498

Have you any other files of the case? Yes. I have in a statement showing the returns of factory for the last 12 months both in output and value. It is as follows: _____

101

A78

FROM

LOWER MANNING

Co-operative Dairy Co., Limited,

CROKI, MANNING RIVER.

June 3rd 19

[Handwritten signature]

The Butter value in Sydney

May 97	16296	941	10	-
June	16893	1154	9	10
July	13720	799	4	8
Aug	12514	622	11	8
Sept	14957	690	14	3
Oct	28392	1064	14	-
Nov	27133	975	8	5
Dec 97	30128	1032	5	4
Jan 98	44408	1431	7	8
Feb	40820	1333	19	4
Mar	43064	1586	13	4
April	39480	2045	10	4
	327,809 lbs	13,678	8	10

~~146 tons~~

The freight paid the N.C. Coy for Butter alone for the last 12 months @ 1/- per 1/2 cwt was £292.
 Say nothing of the freights from Sydney which would amt to fully £60 more.
 or a total of £350-

[Faint handwritten signature]

[Faint handwritten signature]

1299 I see it in April this yr you had ~~39,480~~ ^{39,480} lbs of butter
 it was valued at £27 15 10 s 11 ; and you compare April 1897
 & ~~1898~~ April 1898 ? I don't see it in the report ; the ut-
 put is nearly ~~trebled~~ ^{for} trebled itself this yr compared w t of 1
 previous mo. T last 6 mos the number of cows has been
 than ⁱⁿ previous 12 mos.

1300 [Do you know ~~the~~ ^{the} number of farmers who supply you w their
 cream or milk, as the case may be ? There are abt 150 old milk
 suppliers and 40 old cream suppliers

1301 How many cows does it represent ~~that~~ ^{the} it is hard to
 make out. T herds w 120 head, if the largest herds, down
 to 4 or 5, if the smallest. I think you can safely say 25 head
 apiece, on the average, in milk.

1302 In reference to yr factory, what machinery is there
 there ? In the factory is a 16 hp boiler, a 12 hp engine,
 3 separators and 2 large churns

*Faville
Muller*

A 30

1303

What is the capacity of the chambers 1500 lbs each.

We have also cool chambers and a compressor and one butter worker

and of course ~~some~~ various machines, test machines &c.

Par 1304

According to the report you have sent it is doubtful if work you are

doing at present? Yes, and outside of the three creameries.

1305

But I mean your plant is sufficient to cope with

the work you do at the present time? Yes fully so, or with addition of

another separate one so we could make it equal to doing double the

work. We also have a large pump for our water supply.

1306

It means an increase it will not take place for a few

years to come? We expect to be put to our ~~best~~ ^{best} next year; we

expect to be double then.

1307

Are so many using their farms for dairy

purposes, that a lot of good raised in spare ground on which they can

run cattle too

1308

So, in your intimate knowledge of the dairy industry,

you think the dairy industry has a great future before it? I do,

especially ~~up~~ up to river

1304

I suppose it is the rate of carriage? Yes; there is

no other means

1310

Is it so satisfactory to you so far? Yes. Only

thing is the delay ~~of the steamer~~ *of the steamer*. Sometimes as 1050

our butter that it is not being able to get out. It

makes it bad if we, especially in the summer.

~~the butter is not being able to get out. It makes it bad if we, especially in the summer.~~

~~and the butter is not being able to get out. It makes it bad if we, especially in the summer.~~

~~and the butter is not being able to get out. It makes it bad if we, especially in the summer.~~

~~and the butter is not being able to get out. It makes it bad if we, especially in the summer.~~

~~and the butter is not being able to get out. It makes it bad if we, especially in the summer.~~

~~and the butter is not being able to get out. It makes it bad if we, especially in the summer.~~

~~and the butter is not being able to get out. It makes it bad if we, especially in the summer.~~

~~and the butter is not being able to get out. It makes it bad if we, especially in the summer.~~

~~and the butter is not being able to get out. It makes it bad if we, especially in the summer.~~

~~and the butter is not being able to get out. It makes it bad if we, especially in the summer.~~

1311

What are you paying for it? Carriage is cheap,

now? \$2 per ton. ~~enough~~ *carriage is cheap,* but there is delay and loss

that not being able to get it to market sometimes. If the delay

were taken away we would be all right

105-

1312 What is the cause of delay of the bar

13 If it is removed so that the bar will not be an obstacle to navigation will not it serve the people of this district as well as they do? If they can remove the obstacle at the bar I think it ought to suit the district

14 Do you think it would get your butter conveyed as cheaply by rail to Sydney as by water? No, I feel sure we would pay twice as much

15 ~~There is~~ It would take away a lot of the profits of your factory? Yes, it would.

16 It would ~~mean~~ ^{either} take ^{some of the} profits from your factory or reduce the price you make for the butter ^{no} supply you with milk and cream? Yes, it is what it would mean. If the bar could be made navigable in all weather, I do not think the people would have anything to complain of.

13 17 ^{per} Ten fathoms - If there were 12 or 15 ft of permanent water on the bar and the river were deepened to that extent all the way up to ~~where you could get a good harbor for~~ ~~the~~ ~~purpose~~ of shipping the butter now it would be a good harbor if the requirements of

104

cut of the ...
in ...

+

13 23 What was it ... in ... ?

This month it was ...

22 What is the ...

What was it ...

21 Can you ...

20 You ...

Is ...

You ...

And it ...

... was

1318 It ...

... I ...

A 93

710574

Muller
Paterson

A 84

Continuathn o evidece Manning river harb'r works

Saturday June 4, 1898

T ctee met at Harrington at 2 p m

Present -

Francis Augustus Wright Esq, Tom Chrman,

Hon D O'Connor

Thos Henry Haszall Esq

John Lionel Pagan Esq

George Black Esq

T ctee further considrd t proposd harb'r works at Manning Rivr

Henry Deane Walsh, district engine'r, Newcastle, sworn

and e ad -

1324

Tom Chrman - These works are under yr charge are

they not ? Yes

108

1325

Will you kindly take this plan and explain fully to the
 committee what has been done already and what you propose to do? No 1.
 wall - it is the north training wall, colored black, starting from
 near the painted rocks and going easterly, was commenced in June
 1895 and in Jan 1896 it was thought necessary on account of the very
 crooked channels inside, in the ^{basin,} ~~basin~~ to run a training wall in a
 westerly direction - a river training wall - and it was started
 in Jan 1896.

26

What is the length of the portion already constructed? The
 amount of the north training wall constructed up to date ^{was} ~~is~~ 2000ft or
 2300ft at the time the calculations were made, and there are also
 1287ft of the river training wall constructed.

13 27

How much further east is it proposed to construct the
 north training wall? ~~It is proposed to~~ ^{extend} ~~the~~ north training
 wall ~~at~~ turns into a breakwater from now it begins to rise to a
 greater height and will have to be made of a heavier class of stone.

and it is proposed for the present to extend it in an easterly
 direction 900ft farther from the point ^{where} ~~at~~ this plan was designed,

104

21054

A 86

or abt 800ft fm where you saw it today

1328 Taking t southern side, what are t proposd works

there ? It is proposd to create a barrier bank 5200ft long, o
small stone such as we are puttg in t ~~at~~ top end o t river
training wall, and to construct a southern brkwater 2600ft long

29 Is t whole o tt brkwater proposd to be constructd
at present ? 2600ft o it is proposd to be constructd at
present

30 Will you kindly say at what point it terminates ?
Almst oppste where it is proposd to terminate t north ^{an} brkwater,
but slightly furthr to t east. Some distce up t coast where t
scrub hs broken away and where there is a chance o t sea
breakg thro, on account o t narrowness o t belt o land betwn
t ocean and t river, it is proposd to construct 1500ft o rubbl
stone facing to protect tt .

13 31 To prevent t poss-y o t river breakg thro there ?

Yes. It may eventually be necesry perhaps to continue tt rubble

110

*Paterson
Matthews*

stone facing until it meets the barrier bank

1332 [Now, as regards works on
the western side of the river? On the western side of the
river it is proposed to carry the training wall in an easterly
direction some 8900ft farther than it is at present - up to
Chinaman's Pt

33 Can you tell us the cost of the proposed works? The cost
of the north ^{ern} river training wall will be £24,307.10s

34 [And the northern
breakwater? The northern breakwater, so far
as we propose to go, is estimated to cost £18,652.10s

35 ~~What~~ total proposed expenditure on the northern
side ^{is} £43,443 15s? Yes

1336 Now on the southern side? On the southern side the barrier
bank, £15,950 and the southern breakwater, so far as we propose to
go £36,162 10s



1339

You have omitted the cost of the rubble stone facing?

It is £1530. Then there is supervision & £⁴713.15s

~~It makes a total of £36,162.10s~~

38

Making altogether how much? £99,800 - practically

£100,000

39

Will you now kindly explain what has been the effect on the

entrance to the river of the works already constructed? Of course we

could not expect the works so far as they have gone at present to have

any very material benefit up to this. It is only from this out that

we may expect a great improvement

40

But has it effected any improvement? It has effected an

improvement. It has prevented the channel from going north parallel

along the beach as it used to do in the old days and it was a very

dangerous entrance to the port and it has had the effect of making the

water deeper.

13 41

The water is deeper? It is decidedly deeper now than

112

it was then

1342 Do you expect any permanent improvmt fm t
 constructn o t northern works bef t southern works are well
 under weigh ? I do not think th t southern works will h such a
 beneficial efect, in creatg a permanent chanel, as t northern works
 will, but t southern works will h t grt advtge o protectg
 vessels comg in fm sea or going out

43 Will t southern works be at all affective in prevent
 -ing t washing of the sand in by south east gales ? Yes, it
 will permanently fix t southern side o t chanel inside, wh wil
 be a very beneficial efect, I think

44 So th if t chanel is once scoured out, by t
 naturl actn o t river, w t assistce o dredges, it is not
 likely ~~to be silted up~~ ^{to be silted up} agn by t action o S E weather ? I do
 not think it will ever silt up, after these works h bn con-
 structd

1345 What efect will t constructn o these works h on t
 river a little higher up - f instce, on t flats where we stuck

*Matthews
Barnum*

today? We have always had the disadvantage of having two channels inside; one channel running in shore on the Harrington shore, ^{and} carrying the greater portion of the ebb tide with it, and the other ~~one~~ running about the centre of the old inlet.

13 46

What effect do you think the construction of these works will have on the scour generally? It will force the whole of the tide up and down in the one channel and it will tend to keep a permanently deep channel. The effect of the two tides parting at the old crossing was that we had not sufficient scour in the channels to keep either of them deep enough, and it necessitated constant dredging, with most unsatisfactory results.

47

When these works are completed, instead of having a channel on either side you will have one permanent channel ^{? yes} down the river training wall.

13 48

What width is the channel which is now created by the work already done? I am not quite sure of the width, but think it would be about 150ft. It is only a gutter at present.

114

13 49 You designed a portn o these works yrself, did you not?

It was on my suggestn tt this river training wall was carried out

50 And you were guided I suppose in tt recomendtn by

yr previous experce ?By watchg t river and my previous experce in watchg t results o simlr walls in othr rivers

51 And as an exprt in works o this kind you h

every reason to helve tt t carryg out o these works wll prodce good results ?I h

52 It hs bn stated in evidece tt when these works

are completd theye will be permanently on t bar not less than 12ft o water ; do you think tt is likely to be obtnd ?Yes fm

12^{ft} to 15ft

13 53 To obtain tt depth o water a grt body o sand will h

to be scourd out o t river ; is there any dangr o tt sand acumulatg at t new entrance, or will t ocean currents distribute

113

A 92

it and carry it away? I think they will carry it away. I had some experience with regard to the Newcastle harbor works some yrs ago, with the construction of the northern breakwater there, and ~~the same~~ from soundings on the bar made at various times during the extension of the northern breakwater the experience I gained ~~was~~ was that the current had an actual effect of between 800^{or} and 1000ft beyond the end of the wall, scouring out the number of feet on the sand. At Newcastle it shifted the bar out 800^{or} or 1000ft beyond the end of the breakwater, as we went out into deeper water. The breakwater was carried out so many feet at a time and about a yr after its construction stopped we found that the bar had shifted out to that extent. Exactly similar results ~~may~~^{might} not be obtained here, but the tendency would be to some similar result.

1354. Suppose the yr works succeed in scouring out the river and forcing the sand into 4 or 5 fathoms of water, do you think it will be sufficient? I think so

1355 At that point it would not accumulate so as to form a new bar? I do not think it would. The tendency is to throw the sand up behind the breakwaters.

Robinson
1356

The tendency, then, is for the sand to accumulate behind the northern and southern breakwaters and thus strengthen them? Yes

57

And the sand carried out by the river scour will be carried further away by the ocean current? Yes. Once it gets into a little current it goes down the coast.

58

Is anything contemplated for the improvement of the river above? There is nothing contemplated farther than the ordinary dredging.

59

I suppose that in a river like this, after the harbor works have been constructed a dredge will be permanently retained here? Yes; there has to be a dredge in the river for years. The river being subject to floods, it is necessary to keep a dredge here, to keep the ~~navigation~~ river open.

1360

Every flood brings down and deposits ~~debris~~ in the river a certain amount of debris? Yes; and from Wingham to here we have heavy gravel, and below that ~~is sand~~ ^{is sand} here is sand.

1361 Therefore it will be necessary, under any circumstances, to keep a dredge on the river? Yes

62 Can you inform me what is the cost of the dredge and the attendant boats on this river per annum? Abt £3,300 or £3,400 a yr

63 Tow boat, punts, wages and repairs? Yes

64 And it will be a permanent charge I suppose? *There has been a dredge*
for some years
has been ~~used~~ on the river. The Ulysses came here in 1882.

65 *a dredge here*
And will necessarily remain? Yes

1366 *Even*
if these works be successful do you anticipate it will still be necessary to keep a dredge *working* further up *for* dredging the river? As far as I see, the channel is in very good order at

present. *Between* Between Boree and Gundee town ~~we~~ we had a little trouble with the channel, but at present it is in good order.

210574

A 95

13 67

At all time it will be necessary to keep a dredge here, as in other rivers? I think so. Of course it is not charged to the votes of these works, but to the river

68

You do not hesitate in affirming that in your opinion the work as proposed, if carried out, will result in a permanent entrance to this river with 12ft of water on ~~the~~ ^{the bar}? I think so

69 Mr. Tapan:-

Do you have any other information to give? I have information with regard to ~~the~~ ^{the} quantities ~~of stone~~ ^{of stone required} for the quantity of stone required for the river training wall is 194,460 tons; the northern breakwater 82,900 tons; rubble ~~work~~ ^{face}, 10,200 tons; the barrier bank 9,300 tons; the southern breakwater 131,500 tons.

70

I suppose there is no doubt that all the material you will require can be obtained from your quarry at Crowdy Head? Yes. There is an unlimited quantity of stone there ^{suitable} for the work.

13 71

Good stone? First class - as good as any stone

119

Shoals
Manning's

we h on t coast

13 44

How is t work carried on ~~at present~~ ? At

presnt it is being carried on by a contractr

73

Under a contract f t whole o t work or ony part o

it ? Only t north training wall and t river training wall at prest.

74

None o ~~t~~ this work is being carried out by day

labor I suppose ? None

75

H you tried at any time to carry out any part

o it by day labor ? We h not done any o t Manning works by

day labor

76

Do you know t total cost o t work so far ? T

total cost up to Dec 1897 was £23,020

77

Tt is t total cost f this river ? Yes. Up to

t 14th May t expendtre on t north training wall was £15,422 16s

13 78

I suppose t dept are not lookg in any way to

recoup themslvs f t expendtre o t money ? T works dept do not

120

generally go into it ~~matter~~ ^{very} particularly unless they are asked
specifically to do so

1379

It has not been done? So far as I know, it has not

80

So this money is to be expended to give greater
facilities to the people of this district, and so far as you know
they are not to be asked to pay anything towards the expense? So
far as I know they are not

81

Mr Black - As a rule the bar is about half a mile

to seaward of the painted rocks is it not? Yes, but it is
constantly shifting and it is very hard to say where it will be
after any tide

82

~~When~~ How far is the breakwater at present carried past the

painted rocks? ~~The~~ ^{is} breakwater at present past the painted rocks
about 2400ft. It does not start quite at the painted rocks, but
200ft to the west of the painted rocks.

1383

The breakwater does not start quite at the painted rocks,

you say? No; there is a viaduct which you would walk over today

121

21054

1384 ^{present} ~~will be~~ termination of t breakwater ^{is} ~~about 800yds~~ ^{that is, here}
you are working now it is abt 800 yds fm "Painted Rocks"?
~~is there any work now? A at 2600ft fm t paintd rocks.~~

85 Then is it correct to say th t bar is only half a
mile seaward of t paintd rocks? It is not in t same direction
as t brkwater but very much to t southward of t brkwater

86 Can you give me an approxmte idea? It is very hard
to guess t distce fm t brkwater across, ~~where~~ but I think
it is somewhere abt half a mile.

87 It may be 1000 yds at one time and less at
another? Yes; it depends on whether there is a fresh in t
river

88 We may say half a mile to 1000yds then? Yes

1389 And t ^{present} ~~point~~ ^{point} of t northern brkwaterm is now about
800yds past t paintd rocks? Yes

122

Hodgins
Wilton

A 99

1340 How much farther do you intend to carry out the
breakwater? Aht 800 to ~~900~~ ^{950ft} fm where it is now.

91 How will it compare with breakwater on the southern side
- will the breakwater on the southern side project further out to sea
than the northern breakwater? So far as we propose to go at present,
the proposed end of the southern breakwater would be slightly to the east-
ward of the northern breakwater. ~~It~~ ^{It} would be further out to sea when
it is completed.

92 I suppose it, as a matter of fact, it should be considerably
further out if you desire to give protection to a vessel entering
broadside on to heavy seas in south ~~and~~ easterly weather?
The southern breakwater will be a very great protection to vessels coming
into port.

93 The further it is run out the greater protection it will
be to vessels in certain weather? Yes

1394 How much further would the portion of the breakwater which is
shown by the hatched lines, and which it is not now proposed to

construct,
125

Extend extend on the northern side than ~~it~~ what you propose to construct
1100ft further. The hatched part of the southern breakwater would be
1400ft further

1395- You are paying for the stone tipped from trucks 3s 8d and
tipped from barges 4s 6d a ton? Yes; but we are not doing
anything from barges at present. It was a special work arranged for on
account of the scour from the northern breakwater

96 To prevent erosion? Yes

97 It is not being done now? No, it has not been done for a
very long time.

98 But if you commenced tipping again at the breakwater
end and if you propose to prevent ^a cutting away ^{and} the formation
of a hole at the end of the breakwater, will you not be compelled to
resort to it again? It all depends on whether it scours in the
same way as it did before

1399 It is not scouring now because you are on a

124

21054

A 101

sand spit ?? reason why it scoured as it did before was that
old channel ~~was~~ going out to sea went almost at right angle ~~to~~
from the top end and continued rushing past the breakwater in a way we
~~did~~ ^{do} not expect again. The channel where the stems came in and went
out was practically at right angles to our present breakwater and
there was always a ~~strong current~~ ^{strong current} round by the ~~beach~~ ^{beach,} and it kept
scouring it out.

1400 What has occurred to divert the current? We have carried the
breakwater over all the old channel; we are outside where the old
~~channel~~ ^{channel} was. We have not done any blanketing since Oct 1896

1401 Speaking broadly, I suppose the one of the objects of the work
is a diversion of the channel from the north to the south side. It is from
the south to the north side at present. The new channel will be
practically midway between where it used to work north and where
it used to work south.

1402. Does not the river run out on the north side now? It
runs out to the southward of the northern breakwater now.

1403. Exactly; but is not the current just alongside the wall

125

Wilton
Gibson

A 102

chiefly? Yes, it is alongside the wall

1404 I suppose that both these walls are necessary to the

formation of a good channel? I consider them absolutely necessary

1405. Do you think that you followed the wisest course in constructing the northern wall first? I should be glad to see the southern wall going on with the other, for this out

1406. Do you intend, when the northern training wall has been constructed, to fill in at the back of it with a sand pump, or are you going to leave it open? It will fill itself in by degrees

1407. A slow process? There is no great object in filling it in unless we require to do any dredging in front of the wall, and we will always have that space available for pumping behind; but we hope that scour will do all that is necessary there without any further dredging up there

1408. If it be entirely closed in, where are you going to find an anchorage ground for the tugs? We propose to leave a small

126

viaduct above Harrington whf & boats belonging to the residents
of Harrington and the use of the pilot service, but nothing will
take the John Gollan in

1409. The John Gollan is ~~it~~ a subsidised tug?

Yes

1410. It is not ~~on~~ thought necessary to have a ~~subsidised~~

~~subsidised~~ wave-trap here? No. Sir John Coode in his
report recommended a wave-trap, but the department thought it unneces-
sary

1411. There is a large saving in doing without it? Yes.

The only object of the wave-trap was to reduce the range immediately
inside the entrance. In the case of Newcastle where the harbor is
immediately inside the breakwaters it is an advantage, but in this case
it does not matter ^{whether} ~~the~~ the range ~~is~~ goes half a mile or a
mile up the river

1412. Unless it might cause an erosion of the banks? I do
not think there could be anything that would hurt. We can put large
enough stone to prevent it.

1412

1413

Is there any danger of the river breaking thro some of those lower portions of the sand terrace we saw coming down? The only danger would be where we propose to protect it with a barrier bank and that I think should be carried out at once.

14 Have you ever heard of ~~any~~^{it} breaks thro there? I do not know ~~it~~^{to} break thro, but the spray breaks over there.

15 It is from the outside - I am speaking of the river? It has never gone thro there so far as I know.

16 In the case of there being a big river running down and a heavy easterly gale and the river being banked up inside, would there be any danger of the river cutting thro the ~~own~~^{own} sand terrace? I do not think there is very much danger of its going thro there, if there be a ^{rubble} stone facing to it.

1417

I suppose that under such circumstances it is likely to overrun the low lying land on the north ~~en~~^{en} side of the river? Yes

Bellevue
1418

1418 You say th t spray breaks over t sand terrace ? I shd imagine it does. I h never bn here in a gale

19 But if it shd be found th there were a cuttg thro o t sand terrace, eithr fm without or fm within, then an extensn o t southern training wall wd be necesry, wd it not ?

tr

it might be necesry eventually ^{if} we were to see anythg o th kind,

to conect what we call t barrier bank w what is shown on t pin as rubble ^{stone} facg.

20 There is no induratd sand ⁱⁿ t river ? None th I know of.

21 Then all yr dredg^{ing} can be done w an ordnry sand pump ? An ordnry sand pump wd not be as conventⁱⁿ up t river as t dredge we h, in some places, owing to t cultivatd paddocks on each side

1422 You mean th you wd h a diffy in disposg o t stuff?

144

? Yes, where there is agricul^l id on t banks ; and above Taree
t sand pump wd not be so conventⁱⁿ because wht we h chiefly to
deal w there is coarse gravel wh gets coarser and coarser
as we go up to Wingham, t head o navigatn

14 23 I believe tt as yet you h not found any inconvene
in t river fm rocks - there are no reefs ? There are no reef^y .
I think there are some lge bouldrs on this side o Wingham. We
h removd 2 or 3

24 So far up as tt ? Yes. There ~~is~~^{was} a small reef o rock
running out at Cundletown tt we removd on account o ~~it~~^t stern o
t steamers sometimes gettg on to it, but ~~it~~ I know o no rock tt
wd hinder t navigatn o t river

25 I undrstnd^{it} w t exceptn o one or two flats it wd
be an easy matter to get 12ft or 14ft o water all t way up t
river to Taree ? It is so

14 26 What depth o water cd you easily get as far as
Wingham ? We cd get t same up to Wingham. O course a great deal

130

21054

A 107

depends on t floods. If we were to h a long spell o dry weather and t lower port~~ing~~ o t river were in good order, it wi not be difficult to get 12ft o water up to Wingham if we cd spare t dredge in t one place f so long a time

1427 What dred^g is there ~~between~~ ^{to be done} betwn here and Taree in order to give fm 12ft to 14ft o water to tt point ?

I think tt there are very few spots, except t lower flats here, wh carry less water than tt. Probly t pilot will be able to give you better informatin, becse it is constantly changg .

28 I supose ~~it~~ ^{he} wd know abt t river betwn Taree and Wingham also ? Yes, he wd know t presnt depths all t way up to Wingham. At presnt t river is in fairly good order - fm dredg^g o course

1429 Mr Hassall - If these works ~~be~~ ^{are to be} arred out, do you not

think it wd be advisable to comence the work on t southern side at once ? I shd like to see it comenced at once and ~~come on~~ ^{come on}

131

Wm. H. ...
A 108

w ~~is~~ concurrently w t othr

1430 Is it not a fact th t heavy weahr fm t south has
t effect o driving t sand fm t most northerly point on Mitchell's
Isld into t channel, and th this causes t channel to shift ?
O course ^a good deal o t sand ~~is~~ ^{drifts} over in heavy gales .
h

31 And practicly it wd be no good carryg out t work
on t northern side unless you were to carry out simlr work on
t southern side ? I think both are necesry

32 And you think t works shd be carried out simultane-
ously ? Yes. I think it ed be done more cheaply simultaneously
becse you ed work t different classes o stone better

1433 And if work were comenced on t southern side at
t same time as you were carryg out portns on t northern side
it wd give a more defined chanel and consequently t scourg
wd go on during t time t work was in operatn ? Yes. I think t
t scour will be chiefly affectd by t northern ~~works~~ works. T

132

^{will}
 scour ~~is~~ always hug t northern side fm where it comes down t
 river

1434 It seems a singular feature o these northern rivers
 tt all o them w one or two exceptions, seem to run parallel w t
 coast in a northerly directn fm some distce bef they break out
 to ^{sea} ~~sea~~? They nearly always work as far as they can to hard
 ground and then they h to come out

35 Does not it seem to show tt t drift o t sand is
 northerly? My experce is tt t drift o t sand is southerly

1436 This river runs along parallel w t sea f some distce
 bef it gets out, and strikes this head on wh t pilot statn is
 situatd practicly bef it gets out into t ocean? But t Hastings
 river does exactly t oppste. T Hastings at one time went
 straight out to sea fm where it comes down t river at t
 northerly headld, and then work^{ed} thro t sand flat until it
 struck t hard ground at Port Macquarie.

210574

A 110

14 37

Then, t Macleay is differt altogether agn ?T Macleay
usd to be north o where t river ^{came} ~~was~~ out. ~~But~~ During a heavy
flood a couple o yrs ago it broke right out oppste Trial
Bay, and beif it cd get away again we fixd it there as far
as we cd w traing walls

38

Mr Black - But t Hastings hs a southern headland tt
protects it ?Yes. T tendency so far as I can see is f t sand
to pile up more behind northern brkwaters than behind southern
ones. Take t case o Lake Macquarie. There it is behind t
northern brkwater tt t sand piles up chiefly. If you h two
headlands and an inlet you nearly alwys h a slight ~~eddy~~ eddy
inside

39

Mr Hassall - Does not tt prove t necessity o a
southern brkwater to make ^{these} ~~these~~ rivers navigable in all weathers
?I think so

14 40

They must be protectd on t southern side to
prevent t sand fm driftg in and closing up your bar entrances

134

Harker
Muller

A 111

More parlarly I think to protect t shippg coms in

1441

[And also to keep a chanel oppen ; if nothg were
done on t southern side o this river ~~and~~ t expndtre on t
northern side wd be to a certn extent valueless ? It wd not be
as efectve as ~~was~~ w t other

1442

You wd h a shiftg chanel and practicy t same
diff^{ical}ties on t br^a as you h at t presnt time ? I think I h

alrdy sd t I think t s^cour will alwys hold t deepwater under
t northern brkwater and t northern training wall ; but t
southern brkwater will help to protect to a very great extnt

135-

William Scott Murray, pilot, Manning River heads,

sworn and exd -

1443 Mr Black - How long h you on stationd here ? 6yrs
on t 1st o next Aug

44 I supose tt you h sometimes seen some heavy
weather here ? Yes

45 Is t entrance a had one in heavy weather ? Yes very
had

46 It is difficult I suppose to ^{locate} ~~place~~ t bar after some
o t sales ~~many~~ ? Yes ; it wants a lot o sound, bef you can
put t marks in positn

1447 How much does it vary at times ? This northern
traing wall hs put a stop on its going. T entrance to t river
hs bn as far as a mile and a half along t beach, runng parallel
along, going right alongside t sand hills, but tt hs bn done
away w now. T northern brkwater being ~~one~~ there, t chanel is
confined more to a positn off t hill. It cannt get north now

210574

A 113

1448 If you were to draw a line straight out to sea east from the painted rocks, how far as a rule would the bar be situated from the painted rocks? It varies. I should say not more than half a mile.

49 Never more? Never more, unless there has been heavy floods in the river, and then the sand goes out in a body and the bar goes out in a semi-circle, ~~but~~ eventually, after the floods ~~have~~ ^{have} ceased, the surplus sand on the mouth goes away with the current.

50 Then as a rule the bar is not more than half a mile distant? I do not think it has been more than half a mile off the painted rocks.

51 What depth of water is there on the bar now? 8ft 6 or 8ft, at the morning tide.

52 What is the lowest depth you have known on the bar since you have been here? 4ft at high water.

1453 What is the tidal range? Take an average, about 2ft

137

Mr Muller
Solomons

A 114

1454 What is yr opinion o t work tt hs so far & n done -
do you think it hs bn o servce to this river ?T only benefit
is tt it hs stoppd t bar so far, but we are only commencing
to get t results now .

55 Pm what part o t proposd work do you anticipate
t most beneficl result ?T crossg hs bn t prt drawback to
vessls gettg in, and I think tt t inner traing wall on t
northern side o t river is going to show t best results. The
sand leaves tt as t work goes along

56 But do you think tt ~~either~~ there will be any
permanent benefit without t constructn o a southern traing
wall and brkwater ?No.

57 When is it most dangrous f vessls to enter t
channel ?On an ebb tide .

1458 W what wind ?~~Southerly winds~~ Southerly and S. ~~Westerly~~
winds are fair winds, but after ^{the wind} gets past south it is
dangerous

138

1459 When a vessel turns to come in and is broadside on to the sea and the wind, there is a danger of her being driven aground on the northern shore, is there not? Yes, a great danger, if she has not good ground tackle and keeps on the weather side

60 Then under such circumstances a southern breakwater is necessary for the safety of vessels making the port? Absolutely necessary

61 What depth of water do you think there is in the river, as a rule, between here and Taree? It varies from 8ft to 14ft and up to 20ft

62 How many shallows do you betwix here and Taree? There is nothing to impede navigation at present ~~at~~ low water. Any patches there were, the dredge has cleared out.

63 But when ~~there~~ ^{they did} impede navigation how many ~~there~~ ^{here} were there? There ~~has~~ ^{been} only ~~two~~ two - one at each end of Dumaresq island.

1464 Those have been removed by the dredge? Yes

210524

A 116

1465 ^{depth?} What depth o water h you there ^{now} ? 8ft or 9ft at
low water

66 Do you know t river betwn Tarce and Wingham ? Yes

67 What depth o water h you thro-t there ? I think
^{was} abt 7ft ~~is~~ t lowest water we found in t last soundgs I took
- tt is at dead low water

68 At t shallowest places ? Yes

69 It is nearly as good as betwn Harrington and
Tarce ? Yes. They are makg t Wingham channel good now

70 But there are one or two shallow places there, ~~are~~
there not ? Yes

71 How many do you know ? There is Clinch's Flat,
Mandook, and Bird's Flat.

1472 What depth o water h you on those at high water ?
There wd be ~~the~~ 9ft to 10ft w a good tide ; it wd all depend
on t ^{rise} o t tide. T tides rise fm 15 inches up to ~~at~~

4ft [↑] 6 inches.

140

Solomon's
 Kellewell

7470

14 73 I thought you sd you hd only a 7ft river between
 Taree and Wingham? It is soundgs at dead low water

74 What is you at high water? I sd t tide s average fm
 15 inches to 4ft^{in.}6. Takg an average, there wd be 9ft at high
 water in t river between Wingham and Taree, ~~and what on t~~

What

75 [And what on t thre shalows you h spoken o -
 Clinch's flat, Mundook, and Bird's Flat - wht depth h you
 there? I h givn you t lowest, and t average o t tides. There
 is fm 15 inches to 4ft^{in.}6 rise, and t average on these flats I
 shd say wd be betwn 8ft6 in and 9ft at high water.

14 76 Then these flats are not very grt obstructns to
 navigatn? But there are such things as N E winds and during
 t time they last they drain t water completly out o these
 rivers. These rivers run very dry then, and there is salt water
 to be found at t head o navigatn in dry wa^{ther}

141

1474

Well, then, the whole of the river is shallower at the

time? Yes, it affects it all

1478

As far as I can understand from your evidence, there is

a difference of only about 6 inches between the shallows and the deep

points throughout? Oh no. I should say 6 to 20ft in the river. There is no

comparison between the flat and those holes ~~which~~ into which

they have emptied the dredges of years. There are places to ^{they} cannot

~~fill~~ fill up

1479

Well, would it be necessary in order to provide a

good channel between Wingham and Taree to do any dredging?

There is very good water now for the class of vessels we have visiting

the river

1480

Can the "Coraki" go up to Wingham now? I understand

that she can go up at dead low water

1481

Can the "Electra" go up? Yes

~~Can the "Electra" go up?~~

142

210574

1482 Cd t "Electra" get ovr t bar now? Yes; she cd not get ovr t crossg

83 What do you call t crossg? T flats oppste Harrington

84 Then what you call t crossg is an onstacle to t river navigate now? It is a great onstacle now, and I am sorry to say tt during the so winter months all t work will h to be done by night, w a great risk, as t day tides are not good. ~~Fm May to Oct there are entirely night tides~~ The Fm May to Oct t good tides are entirely night tides and ~~will h~~ ^{try} will h to be done between 12 o'clock in t day and 12 o'clock at night so as to catch t big tides. Nearly all t vessis will h to be towed over these flats during t p.m. tides.

85 If t ~~bar~~ crossing were removed, wd it state o things be altered? Yes. By t removal o t crossing I shd fancy tt t body o water wd travel in a more correct course and give better results. Now ^{it} these flats distribute t water all over, there ~~is~~ ^{is} no confined channel at all

1486

Then your opinion is tt unless t channel be narrowed

145

Rehman Patent

A 120

and the water of the river be given a greater ^{ing} power, this crossing; cannot be permanently removed? No it cannot

1487 I suppose it is rare for a sailing vessel to come in without assistance? No - quite common.

88 In favorable weather? Yes

89 What is the most favorable wind for entering the river?

Between a point south and east

90 What is the most unfavorable? Westerly

91 Due west? Due west, straight ahead.

92 Is the reason for the existence of a bar? Yes - confined, no room to tack.

93 Mr. Bassall - In the one case you have a fair wind and in the other you have a head wind? Yes

1494 Mr. Black - Is this not a dangerous entrance with a

144

1486 Then your opinion is that
unless the Channel be narrowed

2 ok, yes.

southerly gale. A southerly wind sweeps along t beach and a ship comes w ^{her} head to t westward and t force ^{of} brings her broad-side on to t southerly gale; and w wind and sea agst her, it is dangrous

14 95 She is apt to be driven on t north head? Yes ^{to}

96 It makes it necesry to h a southern brkwater? Yes

54
55

97 How far do you get t ocean currnt? T ocean currnt sweeps across t head o t brkwater?

98 Then if t chanel were cleand out by t river, and t ocean currnt got hold o t sand, there wd be no dangr o its being deposd anywhere abt t port? No

99 It wd be taken right away? Yes

1500 You heard Mr Walsh's eviuce? Yes

1501 Do you think tt, if t northern and t southern brkwaters ^{were} carried out, as he indicatd, you wd h a sufficient sweep to carry t sand within t influence o t ocean currnt? Yes .I

I think it wd become permanent

1502 But I suppose it no matter what improvements may be made, there will always be some weather in wh it will be dangerous for vessels either to leave or to enter t river? Yes

1503 Like t last gales? No ships ever built wd stand such weather as we hd here

1504 H you seen any improvmt in trade o t river during t 4 yrs you h bn here? Things are lookg up now. Things h bn very dull e late, but instd o one sawmill there are three sawmills now, and t shippg is commencing to incerse on account o t timber trade

1505 Mr Hassall - Do you know if any attempt hs ever bn mde to remove sht you call t "crossg"? Yes, several attempts, but it gradually fills up agn. A body o water may flow thro a deep cut chanel for a considerable time. There is no account = ing f t changes ^{made by} t tide and wind, and t sand is continually ^{the} on t move.

1306
1307

And it is impossible to deal w it unless you h it confined in a definite channel ? There is no stopp; it until it is confined

1307 What class e sailg vessels trade ~~to~~ here ? There are schooners fm 15 to 100 tons

1308 Drawing what depth o water ? On an average 6ft 6 in. ^{She} There is one now in t river wh draws 8ft and ^{she} ~~abv~~ has to be very carefully handld. T last time she was here she ^{lay} ~~was~~ ^{for} a week to get a favorable opprty to get out

1309 And does she h to lay long outside waiting to get in.?? vessels generlly come back light. It is an advtge to vessels comg; in. ~~They are lightly loadd and easily saild in and managed over t bar~~ They are ~~unporthable~~ easily headed in and managed over t bar afterwards. It wd never be safe f deep_laden vessels to try to come in over these bars .

1310 What effect will t improvmnts o t river h on t navigatn ? I think tt if once t water is confined t channel will be all right ; but now one quanty o water goes along t ~~north beach~~

147

~~Along~~ north beach and middle quantity up the centre and the south branch & it goes round along the south spit and comes back on to the bar again

1571. And it is what brings the sand into the mouth of the river? *Yes.*

1572. The effect of the improvements would be it by confining the water to a definite channel it would ~~kill~~ the effect & kill the eddies which deposit the sand in the channel and would of necessity sweep ~~the~~ the sand out to deep sea water? *Yes*

1573. The training wall on each side of the river with the assistance of the dredging operations, give you as good a channel inside the bar as you could expect to have? *Yes*

1574. And if the breakwaters had the effect of giving you 15 feet of water on the bar, there would practically be no hindrance to navigation of vessels of a decent size? *Quite so*

1575. What size sailing vessel could come in then do you

210524

A 125

2 think. A vessel of 14ft draught ~~400 tons~~ 400 ~~tons~~ or 500 tons register

1576 [They] would practically come in light? Yes, and go out load

17 Then the effect of these improvements will be to make the navigation of the river practically safe and within all probability increase the trade and the traffic up and down the river to a considerable extent? Certainly

18 Do you know the entry pretty well around here? I know it fairly well

19 You, as pilot here, would have a pretty good idea of the trade on the river - is there much? Last year 73 steamers visited the river and I think 67 sailing vessels; but it was a very dull year for sailing vessels, the timber trade was very quiet. This year I think there will be much better results.

1520 It is ~~in~~ ⁱⁿ the present state of affairs when there are so many obstacles to navigation and risk of loss of passages

149

*Walter
H. Jones*

A126

in consequence of difficulty in getting in or out? Yes

~~Do you think it is important~~

15-21

But you think that ^{proposed} improvements if effected would materially

increase the traffic on the river? There is no doubt about it

22

Do you think that if the river navigation were improved as proposed it would serve the requirements of this district fairly well? I think so

23

The river being navigable for ocean steamers up to Wingham would practically, you think, be able to ^{going} ~~carry~~ ^{successfully compete for} the whole of the trade of the district? I do

15-24

Tom Chrmm - Before the construction of the northern training

wall the entrance must have been very bad ^{with} ~~to~~ southerly or easterly winds? Scarcely a month passed but we had a ship ashore, a tug boat ashore, ~~the~~ ^{the} star ashore. I had 80 worth of salvage ~~in~~ ^{gotten}. The Association of Underwriters in Sydney thought it ^{was} ~~was~~ the best step to take. They ² got ~~salvage~~ ^{salvage} tired of coming here to the vessels off


150

15-25

It is proof positive that the present works have made things better? There is such a thing as a mishap now and again, *but* nothing serious. No bones have been left on the beach, but every vessel that has gone on has got off

15 26

The evidence of the Captain of the Ceraki is that the bar shifts as much as ² mile from place to place - do you know that to be done?

Not lately ¹ 

157

William Charles Reading, Civil Engr, Harrington,

sworn and exd -

1527. Mr Hassall - What positn do you occupy? manager of t
contractr of these works - G.C. Wilce^e cks.

1528. [He ~~is~~ is at present carryg out t harbor improvmts on
t Manning river? T northern traing bank and t inner traing
wall

29 How long has t work bn carried on? Aht 3 yrs

30 Where do you get t material fm? Crowdy Head

31 Distant how far fm t river? Aht 4 1/2 mls

32 Conveyed by what? We h a regulr tram line laid down.

There are two locomotives and 50 trucks employd on t work

1533 Do you make fairly good progress w t work? We
average aht 5,500 tons of stone a month.

1534
1535

1534. And it wd give you a length • how much, so far as
t traing wall is concernd ? O course it varies accordg to t
depth • water

35 But on an average ? When travellg over t spot
we h gone as much as 250ft a month, but at othr times we go
only abt 20ft a month

36 So it wd be difficult to strike an average, as
t distce done per month depends so much on t depth • water ?
You cd not do it

37 Is t stone • good quality ? Yes ; I think it is
abt as good stone as you cd get f t werks. It is a great sand-
stone - a very hard stone

1538 Not likely to be affectd eithr by wind or by
water ? No ; I do not think there is any chance • its being
affectd

153

1539. What are the largest size blocks you could ~~work~~ handle or be handled from the quarry? I have handled stones up to 12 ~~stone~~ ^{tons}, but you could obtain them any size.

40 What is the largest size stone you could obtain there? I have had a stone in the quarry 250 tons, but of course we could not handle it.

41 Then if the proposed breakwaters are to be constructed the material is at hand - material of excellent quality - which could be obtained in blocks up to almost any size? Yes. There is a percentage of about 60% of stone below ~~the~~ 1 ton.

42 But ~~plenty~~ suitable for training walls? Yes, suitable for training wall purposes. It would be a very expensive work to carry on the southern training wall unless you were also carrying on the smaller training walls concurrently, ~~first~~ ^{so as} to get rid of your smaller stone.

1543 You think, then, that if the work ^{be} carried out, it will

154

21054

A 131

be advisable to h t brkwater in course o constructn at t same time as t traing walls are being constructd in order tt t material get fm t quarry can be utilisd to t best advtge ? It is absolutely necessary to do tt in order to get t work done at an economical rate

1544. Othrwise you wd h to shift t material two or three times evr ? Yes. All t small stone hs to be handld and ~~wd~~ ^{not} wd h to throw it away fm t quarry in any case .

45 If you were getting out large stone to construct t brkwater you wd h to throw t smallest stuff on one side and handle it 2 or 3 times ? Yes. We hd t same diffy here when t northrn traing bank ^{was} started. There was an accumulatin o abt 2000 tons o small stone below our contract size, and we get rid o tt when they startd t inner traing wall ~~and~~ ^{up} t up river wall

1546 You find t lighter stone ^{acts} ~~as~~ almst as well as t large stone inside t river, where it is not affectd by rough weather ? Certly

133

Robinson
Adams
1547

The sand, I presume, drifts into the interstices between the stone and gradually forms a solid bank? I do not think the sand makes any difference at all with it. On the northern training wall a great volume of stone has accumulated which would ~~be~~ ^{be} as packed, ~~but~~ ^{but} the sand would percolate into the interstices in the wall which, in my opinion, has no effect.

148 With regard to the bank ~~of~~ ^{near} the northern training wall below Harrington, do you think it would be scoured out provided ~~it~~ ^{it} training wall were put on the other side of the river, and a breakwater carried out ~~at~~ ^{I mean the sand spit on the south side of the wall?}? Since the westerly or S.W. ^{east} winds have prevailed during the last few weeks - it is since the last gale - I consider it about 5 acres of the spit has already gone away - it is, since May 6th.

1549 It has gone out? It has disappeared. A lot of it has come in and formed further up the wall. The channel has gone over at least 200ft to the wall, and the south spit is going over a corresponding distance.

1550 You heard the evidence given by previous witnesses.

156

remain to be constructed to the southern ^{side} wall as well as the
 northern end and also the construction of the breakwater; can you
 approximate its value; in your own experience, do you think it is
 an advisable work to carry out? I think the southern breakwater
 should be built first because it is a good bar now. A depth of
 3 to 12 ft, it varying with the scour at different times ^{of the}
 tide, and the entrance now is broadside on or almost
 broadside on to an easterly sea. [practically, the channel runs
 down alongside the training wall until it gets past the pointed
 rocks and then turns off at a right angle ^S and goes southwards ²

Part 1551

It is abt S.E. now.

1552 [Goes in a ^{S. Easterly} ~~W~~ direction? Yes

1553 Almost at right angles with trend of the north training
 wall and breakwater? Yes ^{em}

1554 And you think it is absolutely necessary to con-
 struct ^{the} southern breakwater in order to confine the water in a
 direct channel, and so obtain the best possible results? It is my
 opinion

1554

James Martin Kerkin, Master of the ss John Gellan

subscribed the, in relation, sworn and ex -

1555 Mr. Kerkin - How long have you been residing here? Ans 14 1/2 yrs

56 How long have you had charge of the bar here? During all the time

57 You have heard the evidence given by Mr. Munday and Mr. Walsh? Yes

58 Do you agree with the evidence? Yes. I corroborate the state of the evidence in regard to the southern train wall, as I think that he started as soon as possible. Pilot Munday referred to the heavy tides along the south beach. I do not term them heavy tides but a tide pure and simple, and as you get a strong breeze from the south there is usually a little gutter or outlet along the end of the south beach. This eventually, with a strong rush of tide, begins to wash round the point, which causes the whole bluff to drift inside - the crossing we term it - and I say that if the southern train wall had been carried out simultaneously with the northern wall it would have been better, and now it is certainly necessary for the betterment of the river.

1559 [With all except you agree with Mr. Munday? Yes

158

Madame
1560

A 135

What ~~long~~ is yr boat [?] 57 tons

61 So you can come in at all hours? No I ~~cannot~~
-approach it at low water

62 What do you draw? ^{in. 6} 6 ft 6 in. I ~~cannot~~ have to scrape over
at half tide but at low water I ~~cannot~~. I ~~have~~ heard t ~~evince~~
evince abt t upper part o t river and t changes there; but
there is not t depth in t upper part o t river ^{which has been} as stated.

63 What depth do you say there is between t crosses
and Ghinni Ghinni? There is no ~~depth~~ until you get
oppste Ghinni Ghinni whf. Then a vessel draws 3 ft 6 inches
ed not get across at low tide. Therefore I differ fr t
evince given by Mr Murray on t point, and t point only.

64 Fr Ghinni Ghinni whf to Widdow you ~~get~~ good water?
Yes fairly good, w t exception o Birds flat where t ~~depth~~ is
not good

65 You agree w Mr Murray in regard to it? Yes

1566
years.

Mr Hassall - How long do you be station^{ed} here? 14 1/2

154

1567 you have taken vessels in and out during at times
at all hours of the day and night? Yes

68 Do you think upon the entrance ^{being} as dangerous? Slightly

69 Very dangerous? Yes. I have seen it in all forms.

70 In some weather neither safe for a ship nor for the
lives of the people on it? You could not possibly in some weather
either pass out or come in. For instance in the weather we had
other day you could not have passed out a 1000 ton ship even suppose
it you had sufficient water under her

1571 Do you think the proposed improvements are materially
less than desired? ²Decidedly so. ~~It is not possible to improve~~ ^{With the}
improvements if are proposed you are some 10, ^{if} if the bar were covered
12 or 15ft of water, with a very heavy sea, provided you had a
fair wind, but with the wind blowing out you could not do it or at
least there will be danger.

160

~~1111~~ a137

Reuben Richards, Farmer and grazier, Harrington,

21054 - 1542 -

15-42 Temporary Works - Do you know the proposal for the steps?
Yes

15-43 If you anything to say in connection with it? I wish to
draw attention to the steps to the encroachments which taken place
during the last 30 or 35 years during which time I have been a resident
here and which rendered it absolutely necessary at some stage that
steps should be taken at once

15-44 Encroachments ~~at~~ ^{on} the sea coast. I enclose the
parish map of the parish of Oxley, county of Macquarie, showing the
encroachments, within my knowledge, which taken place during the
last ~~30~~ ^{30 years} on the sea shore of Mitchell's Island and also the
encroachments upon the western side of Mitchell's Island by the
~~river~~ ^{river} which flows into the sea. At the
present time the river has been dammed on the western side of
Mitchell's Island ^{on the} ~~at~~ ^{the} point where it enters the sea, and
-ual erosion being on the eastern side of the river and the sea,
we make it absolutely necessary that steps should be taken to
prevent either the river breaking out on the sea or the sea
at this particular point.

154

15-45. Will rubble stone facing in your opinion meet the case
I think it will but it requires to be done at once

15-46. An ~~engineer~~ ^{engineer} says it eventually the piece of rubble
work will probably be extended ~~to~~ ^{to} the train wall if an affair of
unless the proposed rubble wall is continued to ~~meet~~ ^{meet} the southern
train wall, serious consequences ~~might~~ ^{might} be felt.

15-47. The current state of affairs is -; if the rubble wall
be continued in this way to meet the ~~main~~ ^{will} train wall then you
apprehend will be obviated? Yes. It is useless to expect any
permanent improvement to be derived from ~~the rubble wall~~
unless the southern wall be ~~go~~ ^{go} on. The sand is continually
shifting and whilst the rubble wall might prevent the tide from
shifting in that direction it will find its way to the south.

21054

Handwritten signature

2139

Alexander Newton, Master Mariner, Pelican Island

Massine river, sworn and exd -

1548 Mr Black - You heard the evidence given by Capt Murray² and the last witness? Yes

1549 Do you agree with the evidence? Yes

1580 If you anything to add to it? The only thing I thought I might say in addition was that the land is being cut away at the narrow point shown on the plan.

1581. The sand bars between the river and the ocean is being gradually cut away on both sides, at the proposed site of the rubble stone facing? Yes. The chart with Mr Richards as shows that the strip of land ~~was~~ was 22 chains across when the chart was made.

1582. At one time the narrowest part of the sand bar was 22 chains across? When this chart was made.

1583 How many chains do you think it is across now? Abt 2 1/2 chains; it is, at high water, when we hit the high tides the other day

1584. At ordinary water what width is it? Abt 6 chains.

165

1585 Do you think it is order to prevent it from being cut away, ^{on} the river side some protection will be necessary? Yes

1586 ^{PL} Tom Chynn - You are an old resident on the river?

Yes

1587 Do you think it, if the proposed works ^{to} be constructed ~~at this depth~~ here secure a depth of 12 feet of water on the bar, it will afford ample facilities for the trade of the Manning river? I do not know what the trade may be in future, but it will be the present. ~~as far as you know it now~~

1588 As far as you know it now? Yes

1589 It will give an issue to vessels of sufficiently large tonnage to do all the trade of the district? 12ft of water would admit vessels to carry ^{at a much lower} ~~at a lower~~ rate than is now charged

1590 And can carry all the produce likely to be grown on the Manning for a long time to come? Yes ~~undoubtedly~~
lower rates

End of my Review/6/6
H. H. H.
inquiry

permanent results? I think we will get a fairly stable entrance to the Manning, on the plan of that work.

950. *Mr. Black.*] The position of the Manning somewhat resembles the position at the Tweed? It is very similar. The headland is on the northern side in each case. H. R. Carleton.
17 May, 1898.

951. It is not such a bold northern headland at the Manning as at the Tweed? No; it is nothing like the magnitude of the Tweed headland. At the Manning there are only two small headlands on the northern side, and these are some distance in from the bar.

952. Is it because the bay which you intend to enclose with training-walls is so near the entrance that you have not left an opening as you did in the works at the Tweed? No; it is because we do not expect the shipping to stop down there, it will go up the river. At the Tweed there is a township on the northern bank, and we had to make provision for vessels to get in there. A vessel which goes into the Manning goes straight up the river.

953. How is it that you did not think it necessary to have wave-traps at the Manning, as you have at the Tweed? Because I do not think that the shipping will lie down there. The object of a wave-trap is to intercept the waves and to enable a ship to lie easily at the wharf without any great range.

954. Do you not think that there will be any waves to trap there? There may be waves, but there will be no vessels there for them to hurt.

955. I thought the object of the wave-trap was to protect the training-walls? No; it is to protect a vessel lying at the wharf in front of the training-wall.

956. But when the vessel lies behind the training-wall, what then? There is no necessity for a wave-trap in that case. The object of the wave-trap at Newcastle is to make it very much easier for vessels lying at the Queen's wharf.

957. Do you think the northern training-wall at the Manning is absolutely necessary? I think it is one of the best portions of the scheme.

958. You think it is necessary for narrowing the channel and increasing the scour? Yes; to prevent the river running along the rough northern foreshore.

MONDAY, 27 JUNE, 1898.

Present:—

THOMAS THOMSON EWING, Esq. (CHAIRMAN).

The Hon. FREDERICK THOMAS HUMPHERY.
The Hon. JAMES HOSKINS.
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 Harbour Works at Manning River.

Henry Richard Carleton, Principal Assistant Engineer, Harbours and Rivers Branch, Department of Public Works, sworn, and further examined:—

959. *Chairman.*] The Sectional Committee, when at the Manning River, thought well to suggest some alterations in detail, taking the scheme as a whole as being satisfactory. You will notice the break in the southern training-bank towards the western end. It appeared well to the Committee to fill that up since it would cost only a couple of thousand pounds to do it? Yes, that is a very good thing to do. It ought to be closed. H. R. Carleton.
27 June, 1898.

960. With regard to the Manning River, the Committee, when visiting the place, thought it would be well to make the southern training-bank continuous. Would that be a wise thing to do? Yes.

961. With regard to the western training-bank, the Committee were of opinion that after it had passed some distance up the river, the height of the bank might be lessened, and it might be possible by tying on to the bank further up to prevent some expenditure towards its western side. Thus, the training-wall would be less in height and less in length than that proposed. Is there any serious objection to that proposal? It would be worth while trying.

Take in Evidence marked A

165

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.
Harbour Works at Manning River.

APPENDIX.

A.

[To Evidence of C. W. Darley, Engineer-in-Chief for Public Works.]

ABSTRACT OF ESTIMATE FOR MANNING RIVER IMPROVEMENTS.

ORIGINAL Estimate for complete scheme.

Description of work.	Length.	Quantities.	Rates.	Amount.	Total.
	feet.	tons.	£ s. d.	£ s. d.	£ s. d.
River Training-wall	10,000	261,440	0 3 9	49,020 0 0	North— 112,095 0 0
North Training-wall	2,000	86,000	0 3 9	16,125 0 0	
North Breakwater	2,000	187,800	0 5 0	46,950 0 0	South— 101,550 0 0
Rubble Facing	1,500	10,200	0 3 9	1,912 10 0	
Barrier Bank	5,200	93,000	0 3 9	17,437 10 0	
South Breakwater	4,000	328,800	0 5 0	82,200 0 0	
	25,030	967,240			213,645 0 0
Supervision, &c.					8,855 0 0
Total					222,500 0 0

ORIGINAL estimate for portion completed to 31 December, 1897.

Description of work.	Length.	Quantities.	Rates.	Amount.	Total.
	feet.	tons.	£ s. d.	£ s. d.	£ s. d.
River Training-wall	1,287	66,980	0 3 9	12,558 15 0	23,200 0 0
North Training-wall	2,000	83,420	0 3 9	15,041 5 0	
	3,287	150,400			1,400 0 0
Supervision, &c.					
Total					20,600 0 0

ACTUAL cost of work completed to 31 December, 1897.

Description of work.	Length.	Quantities.	Rates.	Amount.	Total.
	feet.	t c. q.	£ s. d.	£ s. d.	£ s. d.
River Training-wall	1,287	49,736 12 3	0 2 5	6,009 16 10	6,059 3 10
		293 3 2	0 3 8	49 7 0	
North Training-wall	2,000	72,360 0 3	0 3 8	13,266 0 2	15,534 2 9
		10,302 16 0	0 4 6	2,318 2 7	
	3,287	132,692 13 0			21,843 6 7
Supervision and other expenses					1,376 13 5
Total					23,020 0 0

ESTIMATED cost of work now recommended (31 December, 1897).

Description of work.	Length.	Quantities.	Rates.	Amount.	Total.
	feet.	tons.	£ s. d.	£ s. d.	£ s. d.
River Training-wall	8,993	194,400	0 2 6	24,307 10 0	North— 43,443 15 0
North Training-wall	50	2,580	0 3 9	483 15 0	
North Breakwater	900	82,900	0 4 6	18,652 10 0	South— 51,642 10 0
Rubble Facing	1,500	10,200	0 3 0	1,530 0 0	
Barrier Bank	5,200	93,000	0 3 0	13,950 0 0	
South Breakwater	2,600	131,500	0 5 6	36,162 10 0	
Total	19,243	514,640			95,086 5 0
Supervision, &c., say					4,713 15 0
Total					99,800 0 0

ESTIMATED Cost of Breakwater Extensions (31 December, 1897).

Description of work.	Length.	Quantities.	Rates.	Amount.	Total.
	feet.	tons.	£ s. d.	£ s. d.	£ s. d.
North Breakwater.....	1,100	104,900	0 4 6	23,602 10 0	
South ".....	1,400	197,300	0 5 6	54,257 10 0	77,860 0 0
Total.....	2,500	302,200			3,940 0 0
Supervision, &c.....					81,800 0 0
	Total.....			£	81,800 0 0

Matter to
follow

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21034

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

Ad. 10

Appendix—

Printing Office Sig.

Subject:—

Harbours works at Manning Provi.

Letter:—

John

B. J. B. Clau.

~~To Evidence of~~

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Sworn Statement— by Thomas Dyles,
Cooperbrook.

Re Harbour Improvements

With respect to the harbour improvements I unhesitatingly assert that I consider it of first importance to the Manning district. The main River above the narrows is navigable for Steamers of 1000 tons burden as far as Taree (about 20 miles) And with blasting and removing a few patches of rock, and dredging the Shoal flats between Taree & Wingham, the ocean going Steamers could trade to Wingham which is about 10 miles further (by water). I look upon the bar at the entrance to the river in its present state as the greatest possible impediment to the advancement and commercial progress of the district, for if we had a safe entrance with a good & reliable depth of water, it would induce competition, and give us a better class of Steamers, of greater speed - better accommodation & more reasonable freights. And seeing that it is the water carriage that has made the district what it is to day. And as it is by water that the residents of the Manning expect the bulk of their produce to find its way to the markets of the world. Then I contend that if the proposed scheme at any price like the anticipated cost will ensure a safe entrance carrying from 12 to 15 feet of water it will be £100-00. Most judiciously expended

Signed

Thos Dykes

Coopersnook 9/6/98

Sworn before me at ~~the~~ Coopersnook,
15 June 1898. J.A. Knight JP

[One plan.]